Model : DPP22W
Ultra Resolution WDR Day/Night Camera

Printed in KOREA

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Model : DPP22W

Ultra Resolution WDR Day/Night Camera

Instruction Guide

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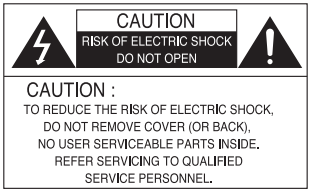
PINNACLE
Advanced Ultra Resolution Cameras



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.

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.

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■ Features

High Resolution Color for Crisp, Clear Video

- Progressive image capture
- 690TVL Effective

Wide Dynamic Range (WDR)

The camera delivers high quality pictures, even when backlit, by increasing exposure in dark areas while decreasing it in bright areas;

- 120dB maximum dynamic range

Day & Night

The camera identifies whether it is day or night and automatically switches to the appropriate mode, depending on its environment. By day, the camera switches to color mode in order to maintain optimal color. At night, it switches to B/W mode so as to obtain better picture definition.

DNR (Digital Noise Reduction)

The amount of low illuminance noise is significantly reduced, and the signal-to-noise ratio (S/N ratio) as well as horizontal resolution, have been improved resulting in a clear and sharp images even in low light.

High Sensitivity for low-light images

The built-in high sensitivity PIXIM SEAWOLF Sensor enables a clear image even at 0.1Lux

Motion Detection

Since the camera detects motion without any additional external sensor, you can monitor activity more efficiently.

VIDEO / DC Drive Lens

The video drive lens and the DC drive lens can be selected by the touch of a switch.

Additional Functions

SYNC (INT/LL), SENS-UP, FLIP(H/V-REV), D-ZOOM, SHARPNESS and PRIVACY functions are provided.

Warning ■

The camera requires periodic inspection.

Contact an authorised technician to carry out the inspection.

Do not Install the camera on a surface that can not support it.

If the camera is installed on an inappropriate surface, it may fall and cause injury.

Do not hold plug with wet hands.

It could cause an electric shock.

Do not dis-assemble the camera.

It may result in an electric shock or other hazards.

■ Precautions

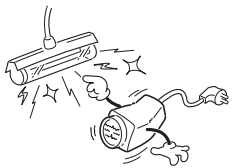
Do not install the camera in extreme temperature conditions.

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.

It can cause the image quality to be poor.

Do not install the camera under unstable lighting conditions.



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

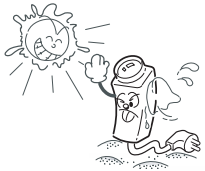
Do not touch the front lens of the camera.

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

Do not drop the camera and protect it from physical shocks.

It can cause malfunctions to occur.

Never keep the camera pointed directly at strong light.



It can damage the CMOS.

Do not expose the camera to rain or spill beverage on it.

If it gets wet, wipe it dry immediately. Liquids can contain minerals that corrode the electronic components.

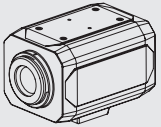
Do not expose the camera to radioactivity.

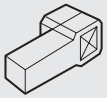
If exposed to radioactivity the CMOS will fail.

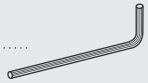
Note

・Please check the power supply satisfies the normal specification before connecting the camera.

■ Components

1. COLOR BOX CAMERA 

2. AUTO IRIS LENS CONNECTION PLUG 

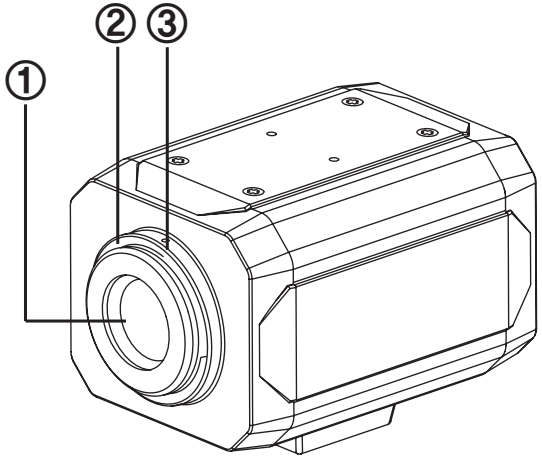
3. L-WRENCH 

4. C-MOUNT ADAPTOR

5. INSTRUCTION GUIDE

Names and Functions of Parts ■

Front

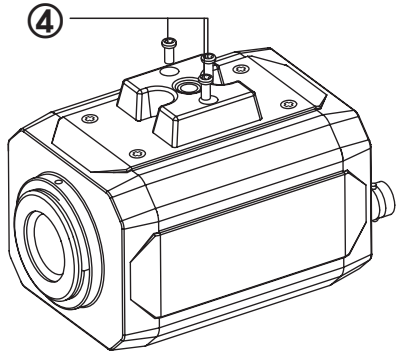


① **Lens protection cap**
Cover the lens when not using it.

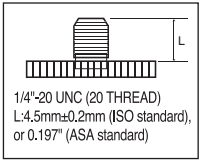
② **CS-Mount lens adaptor**
Attach the CS-Mount lens here.

③ **Back Focus clamp screw**
Loosen the clamp screw with a screwdriver before adjusting the Back Focal length.

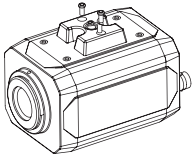
Bottom



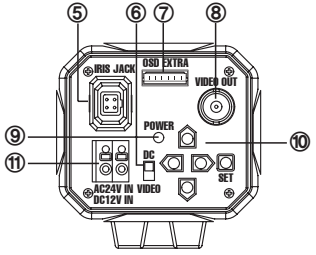
④ **Mounting bracket screw hole**
Use the screw hole when fixing the camera onto the mounting bracket. Please use the clamp screw as specified in the picture.



※ The mounting bracket can be separated and attached on the top of the camera.
please do not tighten the screw to a depth of more than 5mm, otherwise serious damage can occur to the inside of the camera.



Back



⑤ **Auto iris lens connector**
This is the connection terminal for the auto iris lens.

⑥ **Auto iris lens selection switch**
Change the mode to DC or VIDEO depending on the type of auto iris lens being used.

⑦ **OSD Extra**
Connects to the remote controller(option) when you want to install remotely.

⑧ **Video output terminal**
Sends video signals and connects to the video input terminal of the monitor.

⑨ **Power lamp**
Lights up when the correct power is supplied to the camera.

⑩ **Setting button**
- **SET button** : Used for the menu display. This button can be used to confirm settings after changing the value of the selected function or current conditions.
- **UP & DOWN buttons** : Used for selecting items by moving the cursor up or down on the menu screen.
- **LEFT & RIGHT buttons** : Used when changing item values, by moving the cursor to the left or right on the menu screen.

⑪ **Power input terminal**
Connects to the power appropriate to each power requirement.

■ Lens

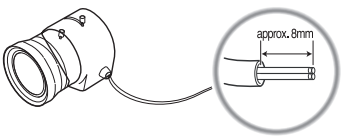
Lenses are sold separately. Lenses such as auto iris lens, CS-Mount lens and C-Mount lens can be used.

Note

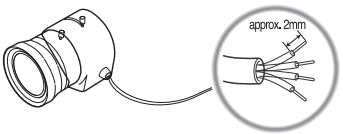
- Use of the DC auto iris lens is recommended to achieve the best results for operating this product effectively.
- Keep the lens clean.
- Any foreign objects and fingermarks on the lens can cause inferior image quality in low light level conditions.

When using an auto iris lens

1. Peel off about 8mm of the outer skin of the auto iris lens cable.

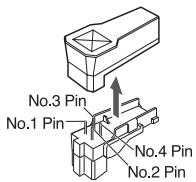


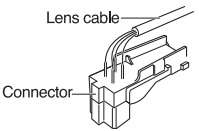
2. Peel off about 2mm of the outer skin of the insulated conductor inside the lens cable.



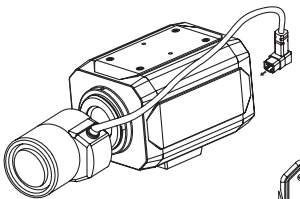
3. Remove the cover of the auto iris lens connection plug and solder the lens cable to the connector pin in the plug.

Pin No.	LENS	
	DC	VIDEO
No.1 Pin	Damping-	Red(power)
No.2 Pin	Damping+	NC
No.3 Pin	Drive+	White(video signal)
No.4 Pin	Dreve-	Black(GND)

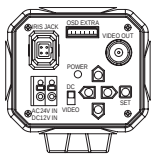




4. Replace the auto iris lens connection plug cover and take off the lens protection cap, and then attach the auto iris lens to the camera by screwing it in clockwise.
5. Insert the connection plug that is connected to the auto iris lens cable into the auto lens connector, which is located on the back of the camera.



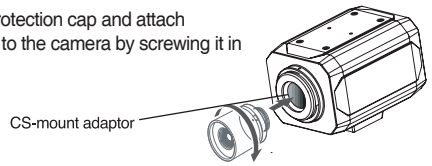
6. Set the lens selection switch, located on the back of the camera, to DC or VIDEO depending on the type of auto iris lens which is being used.



■ Installation

When using a CS-Mount lens

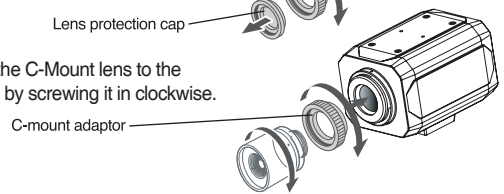
Take off the lens protection cap and attach the CS-Mount lens to the camera by screwing it in clockwise.



When using a C-Mount lens

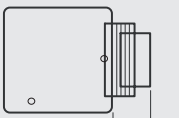
1. Take off the lens protection cap and attach the C-mount adaptor.

2. Attach the C-Mount lens to the camera by screwing it in clockwise.



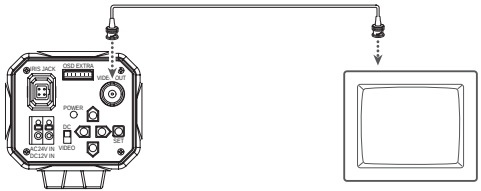
Note

- Use the specified lens connection parts as shown in the picture below. The use of the wrong sized parts may cause damage to the inside of the camera or result in poor fitting.
- Use of a lens which is too heavy affects the balance of the camera and may cause a malfunction. Please use a lens that weighs less than 450g.
- Select Av mode if possible when adjusting the automatic light control (ALC) of an auto lens. Use of PK mode may cause hunting.



■ Connecting to a monitor

Connect the video output terminal located on the back of the camera to the monitor.

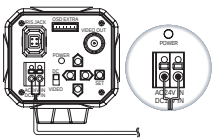


- The connection method varies depending on the type of monitor and accessories. Please refer to the user's manual for each instrument.
- Turn off the power when connecting.

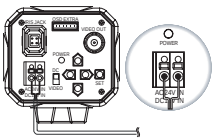
■ Connecting to power

Check the standard power requirement before connecting to power.

Dual Power Type (AC 24V/DC 12V, AC 24V Class2)



DC Power Type (DC 12V, 500mA)

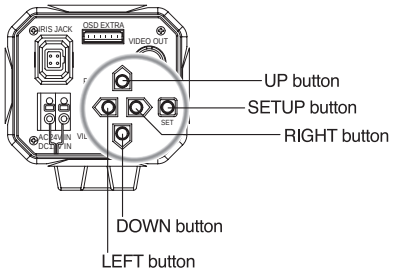


■ Menu

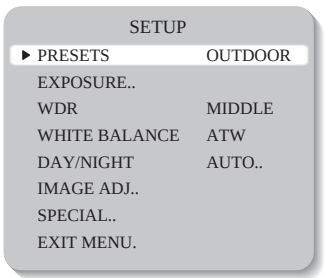
SETUP menu			
PRESETS	· NORMAL	· INDOOR	· OUTDOOR
EXPOSURE	· LENS · DNR · COLOR ROLL		· AGC · BLC · SENS-UP
WDR	· MIDDLE · LOW	· HIGH	· USER
WHITE BALANCE	· ATW · AWB	· INDOOR · MANUAL	· OUTDOOR
DAY/NIGHT	· AUTO	· COLOR	· BW
IMAGE ADJ.	· FLIP · COLOR GAIN		· SHARPNESS · GAMMA
SPECIAL	· CAMERA ID · DZOOM · PRIVACY SETUP		· VIDEO OUT · MOTION · RESET
EXIT MENU			

■ Settings

Settings can be made using the 5 buttons on the rear of the camera.

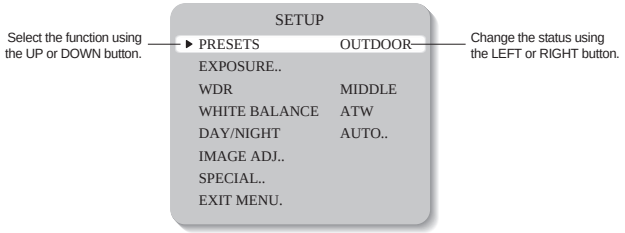


1. Press the SET button
- Settings can now be accessed. The SETUP menu is displayed on the monitor.



2. Select a menu item from the list available by using the UP and DOWN buttons.
- Funtions are selected using up and down buttons.
- The selected position is displayed in blue.

■ How to Use the Camera

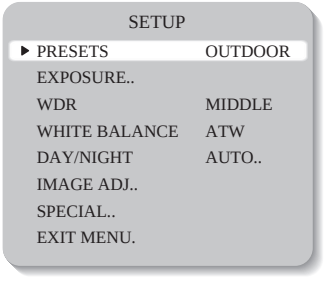


3. Set up a selected item by using the Left and Right buttons.
4. To finish and save the settings, select 'EXIT' and press the SET button.

Note

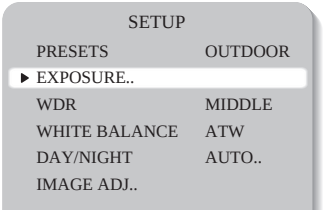
• An item with the ".." icon contains a sub-menu. To access a sub-menu, press the SET button.

PRESETS

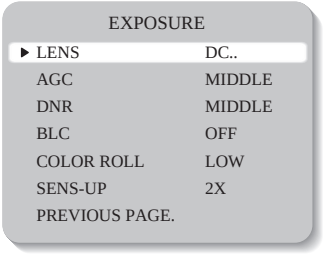


- **NORMAL** : Normal environment.
- **INDOOR** : Indoor environment.
- **OUTDOOR** : Outdoor environment.

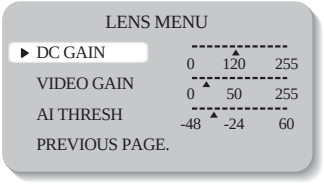
EXPOSURE



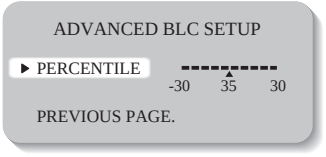
When the SETUP menu screen is displayed, select'EXPOSURE'by using the Up and Down buttons so that the arrow indicates'EXPOSURE'.



- **LENS** : Using this function, you can control the screen brightness.
  ・DC / VIDEO / Manual : Select Lens Type

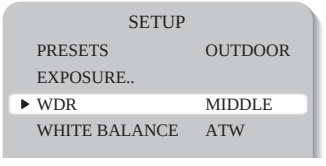


- **AGC (AUTO GAIN CONTROL)** : In low light the higher the gain level, the brighter the screen but the higher the noise level.
  - OFF / LOW / MIDDLE / HIGH selectable
- **DNR (Digital Noise Reduction)** : The level of background noise in low light decreases automatically as the level of gain changes.
  - OFF / LOW / MIDDLE / HIGH selectable
- **BLC** : To optimize the scene when there is a strong backlight behind the object.
  - ON / OFF selectable

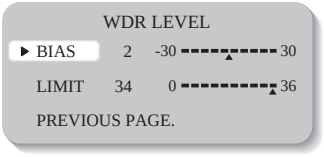


- **COLOR ROLL** : Controls color rolling suppression under fluorescent lighting conditions.
  - OFF / LOW / MIDDLE / HIGH selectable
- **SENS-UP** : When it is night or dark, the camera automatically detects the light level and maintains a clear picture if this mode is activated.
  - 2X, 4X, 8X, 16X, 32X, 64X
  - OFF : Deactivates the SENS-UP function.

WDR



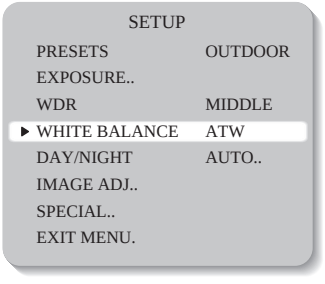
- **WDR** : When the image has simultaneous bright and dark areas, the Wide Dynamic Range makes both areas distinct.
  - LOW / MIDDLE / HIGH / USER selectable



WHITE BALANCE

Use the White Balance function to adjust the screen colors.

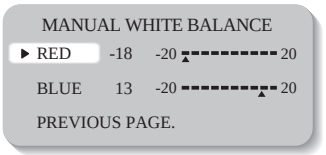
1. Position the cursor to point to WHITE BAL on the SETUP menu screen, select using the Up and Down buttons.
2. Select the desired mode using the Left and Right buttons.



※ Select one of the following 5 modes, as appropriate.

- **ATW** : The ATW mode continuously monitors.
- **INDOOR** : Select when the color temperature is between 4000˚K and 8500˚K
- **OUTDOOR** : Select when the color temperature is between 2000˚K and 11000˚K

- **AWB** : To obtain the optimum state under the current luminance levels, direct the camera to point toward a sheet of white paper and press the SET button. If the environment changes, including the light source, the white balance will require re-adjustment.
- **MANUAL** : Select to "fine-tune" the White Balance manually. Set White Balance first using the ATW or AWB mode. Afterwards switch to MANUAL mode, fine-tune the White Balance and then press the SET button.



Note

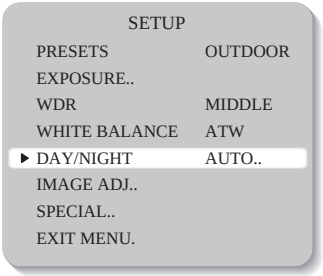
- Under the following conditions White Balance may not work properly. In such cases, select the AWC mode.

① When the color temperature of the subject environment has a very high temperature range (e.g. clear sky, or sunset)

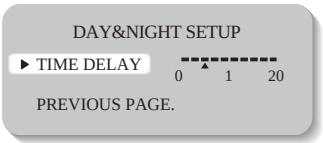
② When the ambient illumination of the subject is low.

③ If the camera is directed toward a fluorescent light, or is installed in a place where illumination changes dramatically, the White Balance operation may become unstable.

DAY/NIGHT



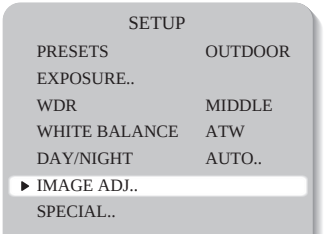
- **AUTO** : This camera has an IR Cut-Filter and automatically changes to the appropraite mode according to lighting levels.To set up the switching time and switching speed for the AUTO mode press the SET button.

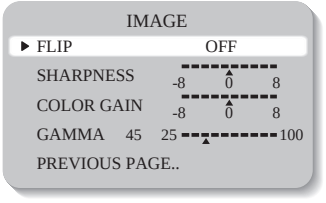


- **COLOR** : The picture is displayed in color.
- **B/W** : The picture is always displayed in black and white.

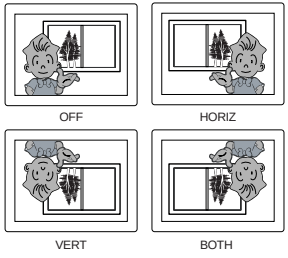
IMAGE ADJ.

When the SETUP menu screen is displayed, select 'IMAGE ADJ.' using the Up and Down buttons.





● **FLIP :** OFF / HORIZ / VERT / BOTH selectable



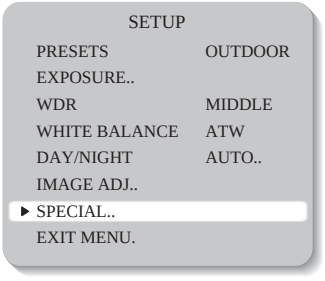
● **SHARPNESS** : The outline of the video image becomes cleaner and more distinctive as the level of SHARPNESS increases. If the level is set too high, it may affect the video image and generate noise.
- The available range is -8 ~ 8

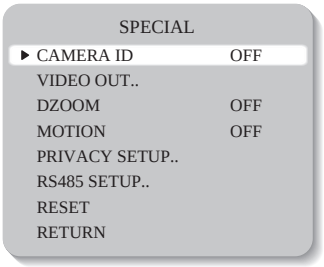
● **COLOR GAIN** : To control the color level in the video.
- The available range is -8 ~ 8

● **GAMMA** : Users can change the gamma setting between 25 and100

SPECIAL

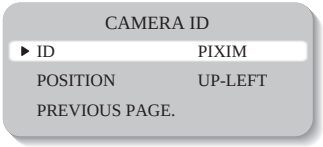
When the SETUP menu screen is displayed, select 'SPECIAL' by using the Up and Down buttons so that the arrow indicates 'SPECIAL'.



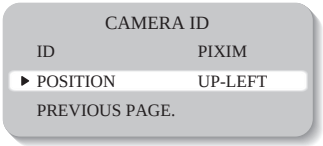


● **CAMERA ID** : User can enter a unique name for the respective camera. The maximum length of the ID is ten characters.

- You can choose ON and OFF with the selector. If you select ON, the entered camera ID is displayed at the selected position in the video picture (normal operation).
- Press the setup button while in ON mode.
- Select the desired position with the selector.



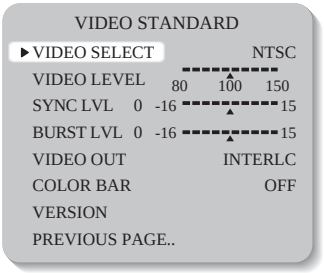
① Move the cursor to the desired letter by using the Set-Up button.
② Select an ID from A,B~Y,Z, a,b~y,z, 0,1~8,9 by using the LEFT and RIGHT buttons.
③ Repeat the above steps until the ID is complete.



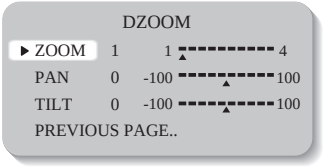
① Select the position where the ID is to be displayed by using the LEFT and RIGHT buttons.

● **VIDEO OUT** : Move the cursor to select the video system

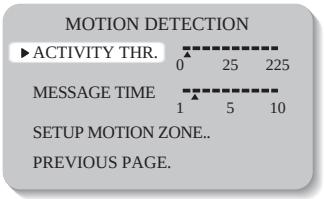
- VIDEO STANDARD : You can select NTSC / PAL, Video level, Sync level, Burst level.

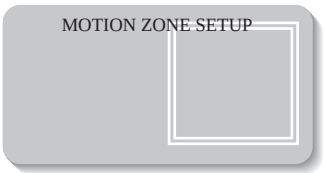


● **DZOOM** : Digital P/T/Z are used to create a zoom lens effect. Zoom Factor (1X to 4X), Pan(±100%, center of image can be moved to left and right edges of screen), Tilt(±100%, center of image can be moved to top and bottom edges of screen)



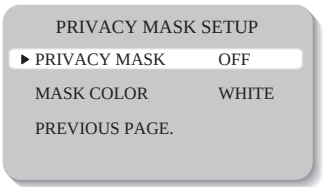
● **MOTION** : Motion detection feature allows camera to trigger alarm message upon detecting motion based on set parameters. The camera detects an object's movement by sensing disparity of outline, and level of brightness and color.

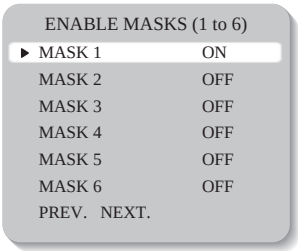


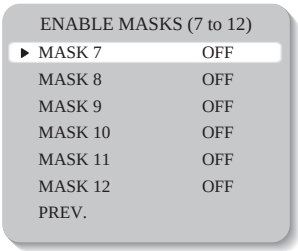


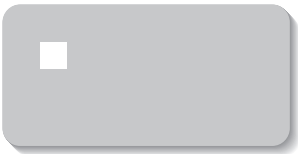
- White : MOTION ZONE Position movement
  Green : MOTION ZONE Size enlargement
  Red : MOTION ZONE Size reduction
- For MOTION ZONE confirmation, keep SET button pressed for a few seconds

● **PRIVACY SETUP** : Mask selected area to ensure privacy.









- White : PRIVACY-ZONE Position movement
  Blue : PRIVACY-ZONE Size enlargement or reduction
- For PRIVACY-ZONE confirmation, keep SET button pressed for a few seconds.

RESET

Resets the camera settings to the factory defaults.

EXIT MENU.

Saves all the setting menus and then exits.

■ Troubleshooting

If you have trouble operating your camera, refer to the following table.
If the guidelines do not enable you to solve the problem, contact an authorized technician.

Problem	Solution
Nothing appears on the screen.	• Check the power connections. • Check the VIDEO signal line connection.
The image on the screen is dim.	• Make sure the lens is clean. Clean the lens with a soft clean lint free cloth. • Adjust the monitor contrast & brightness controls. • Re-position the camera if necessary.
The image on the screen is dark.	• Adjust the contrast control of the monitor. • If you have an intermediate device, set the 75Ω/ Hi-z properly.
The camera is not working properly, and the surface of the camera is hot.	• Check that an appropriate power source is connected to the camera.
The Motion Detection function does not work.	• Check that MOTION DET in the SPECIAL SETUP is not set to 'OFF'.
Color is not correct.	• Check the WHITE BAL settings in the SETUP menu.
The screen flickers continually.	• Check that the camera is not facing toward the sun.

Specifications ■

ITEM	NTSC
Power Consumption	AC24V / DC12V
	170mA(AC24V) / 250mA(DC12V)
Image Sensor	PIXIM 1/3" High Sensitivity Digital Sensor
Effective Pixels	758(H) x 540(V)
Dynamic Range	120dB(Max)
Horizontal Resolution	690TVL Effective
Min. Illumination	0.1Lux
Day & Night	AUTO / COLOR / B/W
White Balance	Auto / AWB / Indoor / Outdoor / Manual
WB Range	2000˚K~11,000˚K
Shutter Speed	up to 1/30, 720 sec
Sens-up	Auto / Off (Selectable x2 ~ x64)
Privacy Masking	12 Zones
AGC	Low / Auto / High / Off
Image Flip	Horizontal and Vertical
Camera ID	On / Off
S/N Ratio	More than 50dB
Video Output	Composite video output 75 ohm terminated
OSD	Built-in
Sync. System	Internal / Line Lock
Iris Control	DC / VIDEO
Operating Humidity	30% ~ 90% RH
Operating Temp.	-10˚C to 50˚

■ Limited Warranty

Digimerge "Pinnacle Series" Cameras . 5 Year Limited Hardware Warranty

Warranty : Subject to the exclusions, limitations and exceptions, Digimerge warrants to the initial end-user purchaser that this hardware product is free from manufacturing defects in material and workmanship under normal use for a period of five (5) years from the date of purchase.

Warranty Details :
The five (5) year warranty period consists of :
- One (1) year over-the-counter replacement warranty covering parts and labor
- Four (4) additional years of repair depot warranty covering parts and labor with proof of RA issued by Digimerge tech
- Note: Return Authorization number (RA) must be issued by Digimerge Technical Support to the Dealer prior to product replacement at the Distributor.

Exceptions to the above warranty are :
- Camera components including, but not limited to, moving parts, motors, fans, heaters, camera image sensors, IR Cut Filters, DC iris and lens assemblies are warranted for a one (1) year period
- Pan Tilt Zoom (PTZ) Cameras and related components including electrical slip ring contacts, and pan/tilt/lens motors are warranted for a one (1) year period.

NOTE : Products are subject to continuous improvement. DIGIMERGE Technologies Inc. and its subsidiaries reserve the right to modify product design, specifications and prices, without notice and without incurring any obligation.

For valid warranty claims made during the warranty period, upon proper proof of purchase (which is defined as a "valid form of a bill of sale or receipt from an authorized retailer or distributor showing the original date of purchase"), defective products will, at the sole discretion of Digimerge, be repaired or replaced with equal or better product in terms of hardware features without charge if all the conditions set forth in this document are met. Any products repaired or replaced within the warranty period, shall be warranted by Digimerge to the initial end-user purchaser for 90 days from the return shipment date, or the remainder of the warranty term, whichever is longer. Products and parts, at Digimerge's sole discretion, may be replaced with new or refurbished items, and the products and parts replaced become the property of Digimerge. Product returned to Digimerge must be in its original packaging or in packaging which provides the product with protection equivalent to the original packaging, and sent with the postage charges prepaid via a shipping method that provides for tracking of your package, to the address provided at the time the RA (Return Authorization) was requested (see "Warranty Service" for explanation of how to obtain an RA). The customer is responsible for all shipping costs associated with the return of the defective products for warranty service to Digimerge warranty/repair depot facilities. Products will be returned to the end-user freight prepaid.

Exclusions and Limitations: Any of the following will void this warranty:

1. Installation or use of the product other than strictly in accordance with the instructions contained in the product's instruction manual;
2. If the product is subjected to operating conditions (including atmospheric, moisture and humidity conditions) outside of the acceptable conditions specified in the product's instruction manual;
3. If the product is subjected to misuse (not adhering to instructions supplied with the product), negligence, modification (of hardware, firmware or software) or abuse;
4. If the product is subjected to electrical short circuits or transients, accident, fire, flood or Acts of God;
5. Adjustment, maintenance or repair of the product other than in accordance with Digimerge approved procedures; and
6. Use of replacement parts other than those specified by Digimerge.
7. If the products original identification (trademark, serial number, model number) markings have been removed, defaced or altered

DIGIMERGE MAKES NO CLAIMS OR WARRANTIES OF ANY KIND WHATSOEVER REGARDING THE PRODUCT'S ABILITY OR EFFECTIVENESS IN PREVENTING OR REDUCING THE RISK OF, OR DAMAGES RESULTING FROM, LOSS OR THEFT OF PROPERTY OR PERSONAL INJURY. THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. DIGIMERGE SHALL IN NO EVENT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES OF ANY KIND OR CHARACTER, INCLUDING, WITHOUT LIMITATION, PERSONAL INJURY, LOSS OF REVENUE OR PROFITS, FAILURE TO REALIZE SAVINGS OR OTHER BENEFITS, OR CLAIMS AGAINST THE PURCHASER BY ANY THIRD PERSON, EVEN IF DIGIMERGE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

No claims or statements regarding the product, whether written or verbal, by salespeople, retailers, dealers or distributors, that are not contained in this limited warranty or in the owner's manual are authorized by Digimerge and do not modify or expand this warranty. Some countries, states, or provinces do not allow the exclusion or limitation of implied warranties or the limitation of incidental or consequential damages for certain products supplied to consumers or the limitation of liability for personal injury. To the extent that such restrictions on limitations apply to the products, the above limitations and exclusions may be limited in their application. In that case, when the implied warranties are not allowed to be excluded in their entirety, they will be limited to the duration of the applicable written warranty, and if damages may not be limited then the above limitations on damages apply, but only to the greatest extent permitted by local law.

Warranty Service :
Warranty service can be received by contacting your Digimerge dealer (during the warranty period). The dealer is required to first contact Digimerge Technical Support for assistance. In the event the problem cannot be resolved over the phone or via email, Digimerge will advise to return the product, at customer's expense, for repair or replacement. Upon receipt of the defective camera, Digimerge will send a repaired or replacement camera at Digimerge's expense to the customer. Dealer should send product to:

In United States :
Digimerge Returns
Schenker Logistics
2363 E. Perry Road
Suite 171, Dock Door 44
Plainfield, IN 46168

In Canada :
Digimerge Technologies Inc.,
Attention: Repair Department
250 Royal Crest Court
Markham, Ontario, Canada
L3R 3S1

Out of warranty service : Please visit our web site (www.digimerge.com) for the name and location of the Digimerge authorized service centers.

■ MEMO

MEMO ■

■ MEMO