Super Wide Dynamic Range

Dome Color Camera

MANUAL

Pixim Seawolf DSP

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION :
TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK),
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL.

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.
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 that 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

■ Warning

The camera needs periodic inspection.
Contact an authorized technician for inspection.

Stop using your camera when you find a malfunction.
If you use your camera around smoke or unusual heat for a long time,
fire may be caused.

Do not install the camera on a surface that can not support it.
Unless the surface is suitable, it could cause falling or other hazards.

Do not hold plug with wet hands.
It could cause an electric shock.

Do not disassemble the camera.
It may result in fire, electric shock or other hazards.

Do not use the camera close to a gas or oil leak.
It may result in fire or other hazards.

1. Features

Our WDR camera is a superb wide dynamic range camera which achieves 120dB max(102dB typical) of dynamic range of the image by implementing PIXIM's Seawolf digital imaging system.

With Seawolf digital imaging system,
- Delivers high-resolution, crystal clear images that accurately capture every aspect of any scene
- Offers the highest resolution of 690TVL(horizontal)
- Ultra-wide dynamic range imaging accurately captures all of the critical details in a scene including highlights, shadows and everything in between without compromising image quality or color accuracy.
- Enhanced low-light performance makes Seawolf the natural choices for both indoor and outdoor cameras for all lighting conditions.
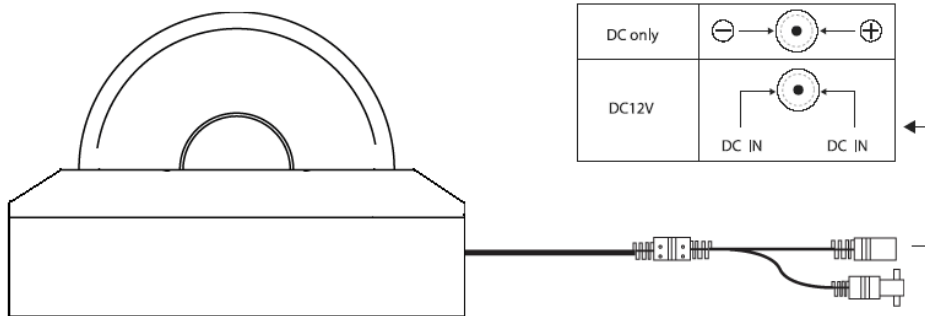
With ICR mechanism,
- Enhances its sensitivity about 10x at night time
- Can accepts the infrared light

Main features are;
• 1/3" CMY Color DPS SENSOR (Pixim Seawolf D8800C series)
• Resolution of 690 Horizontal Lines
• 10x sensitivity enhancement by removing the optical filter
• Switches to B/W and able to accept the infrared spectrum at night mode
• Enhanced sharpness compensation
• Very low noise and superior picture quality
• 0.0008Lux Class sensitivity (0.002Lux@ 2x Sense-up)
• Automatically removable IR Cut Filter
• Automatic White Balance (ATW)
• Built-in 2.8~10mm DC auto iris lens

2. Cable Connection and OSD Control

1) Cable Connection

2) OSD Control

② **SETUP 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.

③ **UP & DOWN buttons** : Used for selecting items by moving the cursor up or down on the menu screen.

④ **LEFT & RIGHT buttons** : Used when changing item values, by moving the cursor to the left or right on the menu screen

3. Setup Menu Operation

1) In the menu

Use ▲, ▼ buttons to move menu, ◄, ► buttons to change the settings and press 🔲 button shortly to select or enter.

🔲 button stands for MENU or ENTER button.

2) Entering menu

Press 🔲 button longer than 2 sec on the back of camera.

3) MAIN

Follow below chart for submenu setting.

```
        MENU        V1.0 - DN

    >EXPOSURE
     DAY/NIGHT            AUTO...
     3DNR
     LENS SELECT          DC...
     PICTURE CONTROL
     SPECIAL
     D-EFFECT
     EXIT
```

MENU	Default	Descriptions
EXPOSURE		Sets COLOR ROLL COMP., AE PREFERENCE, WDR CONTROL and SENSE-UP.
DAY/NIGHT	AUTO	Sets OFF, AUTO or NIGHT **OFF** – Day/Night is disabled and camera works as a normal color camera. **AUTO** – Camera switches DAY from/to NIGHT automatically. N->D THRES, N<->D DELAY, BURST ON B/W can be set. See DAY&NIGHT AUTO SETUP for detail. **NIGHT** – Forced to remove IR cut filter and switch to B/W.
3D NR		Sets DEPTH of 3D NR.
LENS SELELT	DC	Selects the lens type, DC or MANUAL. **In sub-menu, Accurate Focus can be set by function of FOCUS ADJ...**
PICTURE CONTROL		Sets WHITE BALANCE, COLOR SELECT, SHARPNESS, SATURATION, GAMMA.
SPECIAL		Sets MOTION, PRIVACY MASK, SYNC, LANGUAGE, VIDEO STANDARD, RS485 CONTROL.
D-EFFECT		Sets FREEZE, FLIP or D-PTZ.
EXIT		Choose EXIT, SAVE AND EXIT or FACTORY SET.

4) EXPOSURE

To enter EXPOSURE menu, press 🔘 button at MAIN>EXPOSURE.

```
                EXPOSURE

>COLOR ROLL COMP.          OFF
 AE PREFERENCE        HIGHLIGHTS
 WDR CONTROL            MEDIUM
 SENSE-UP              AUTO...
 RETURN
```

EXPOSURE	Default	Descriptions
COLOR ROLL COMP.	OFF	In NTSC system, the entire color tone on the monitor may continuously move reddish and greenish. **COLOR ROLL COMP.** - Reduces the color rolling under the fluorescent lighting.(NTSC system only) **OFF** - Does not compensate the color rolling. **MODE-M** - Compensates the color rolling when a manual lens is used. **MODE-A** - Compensates the color rolling when an auto iris lens is used.
AE PREFRENCE	HIGHLIGHTS	Sets HIGHLIGHTS or SHADOWS **HIGHLIGHTS** - Provides the best detail in the brighter areas. The darker parts of the scene may under-expose. **SHADOWS** - Provides the best detail in the darker areas. It will reduce the dynamic range and the brighter parts may overexpose.
WDR CONTROL	MEDIUM	**LOW** - Produces an image that has better contrast but less dynamic range and is suitable for indoor or low-contrast outdoor scenes. **NORMAL** - Produces an image that has average contrast and is suitable for indoor or low-contrast outdoor scenes. **MEDIUM** - Produces an image that has better dynamic range and is suitable for a lobby or high-contrast outdoor scenes. **HIGH** - Produces an image that has best dynamic range but less contrast and is suitable for high-contrast outdoor scenes. **CUSTOM** - Provides more flexible compensation by ZONE, RANGE and BIAS. When COLOR ROLLCOMP. is set to MODE-A, WDR CONTROL will be fixed as LOW.
SENSE-UP	AUTO	If SENSE-UP is set to AUTO, the maximum sense-up rate can be limited to 2X-30FPS, 4X15FPS, 8X-18FPS, 16X-4FPS, 32X-2FPS or 64X-2FPS in SENSE-UP SETUP. **The integration frames vary automatically within the max. rate according to the light level when light becomes low and DSS is operating**. The higher sense-up rate, the higher sensitivity but the slower refresh rate. Some white dots may appear by sense-up due to the image sensor's long accumulation by a long shutter period.

5) DAY/NIGHT

To enter EXPOSURE menu, press ⬛ button at MAIN>DAY/NIGHT>AUTO...

```
        DAY & NIGHT AUTO SETUP

   >N->D THRES    3   1 ⊔⊔⊔⊔⊔⊔⊔⊔ 20
                        △
    N<->D DELAY   3   1 ⊔⊔⊔⊔⊔⊔⊔⊔ 10
                        △
    BURST ON B/W               OFF
    RETURN

    If it stays in B/W at daytime.
    Increase N->D THRES.
    If it repeats Day<->Night, Decrease.
    N->D THRES just until it stops.
```
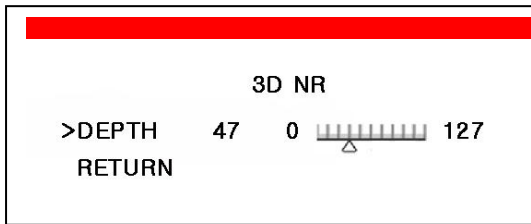
IMPORTANT!!!

IMPORTANT!!!

DAY->NIGHT and NIGHT->DAY operations must be examined and verified at the final step

of the installation.

Block the lens for a few seconds for NIGHT mode and release and let it return to DAY mode.

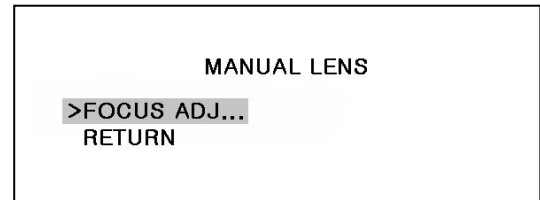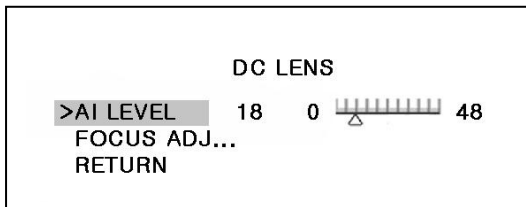| DAY/NIGHT	Default	Descriptions
N-->D THRES.	3	**N-->D THRES** is a threshold level to switch from NIGHT to DAY. Due to the nature of WDR the image level of the scene is controlled down and camera would not switch to DAY even though the ambient is bright enough. Increase the value if it stays in B/W and is required to switch to DAY. Too high value may make ICR repeating between NIGHT<-->DAY. In that case, reduce the value a little and try all of the above mentioned.
N<-->D DELAY	3	**N<-->D DELAY** is time in second while camera maintains its status before D<-->N switches. DELAY can avoid the unwanted/frivolous switching by a short term lights such like the light from the passing car.
BURST ON B/W	OFF	**BURST ON B/W** determines whether a color burst signal keeps output or eliminated when camera switches to B/W. If set to ON, B/W video signal contains color burst signal and is more compatible with the color equipment but shows the same resolution as color video. If set OFF, the color burst signal is removed from B/W video and shows better resolution. Rarely the compatibility problem may occur with the color equipment.

6) 3D NR

To enter EXPOSURE menu, press ⬛ button at MAIN>3D NR

```
                3D NR
  >DEPTH      47    0 ⊔⊔⊔⊔⊔⊔⊔⊔ 127
    RETURN              △
```

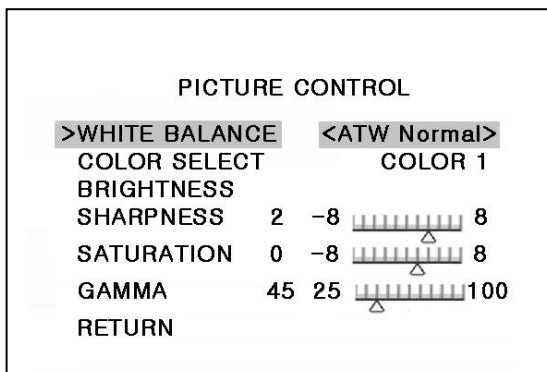| 3D NR	Default	Descriptions
DEPTH	47	Determines the depth of Three Dimensional Noise Reduction. High value reduces the noise strongly but the comet effect may occur for the fast moving object and vice versa.

7) LENS SELECT

To enter EXPOSURE menu, press ⬛ button at MAIN>LENS SELECT>DC... or MANUAL...

```
         DC LENS
  >AI LEVEL    18   0 ⊔⊔⊔⊔⊔⊔⊔⊔ 48
    FOCUS ADJ...        △
    RETURN
```

```
          MANUAL LENS
    >FOCUS ADJ...
      RETURN
```

DC/ MANUAL	Default	Descriptions
AI LEVEL	24	Lower value opens the lens iris and increases the brightness and vice versa. **Too high value reduces the amount of incoming light and may result in a problem which camera does not return to DAY form NIGHT.**
FOCUS ADJ...	-	**FOCUS ADJUST helps the Accurate focus adjustment regardless of DAY or NIGHT.** Sometimes the focus looks fine tuned at day time but out of focus at night time. This function can eliminate the wrong adjustment of focus in any case.

8) PICTURE CONTROL

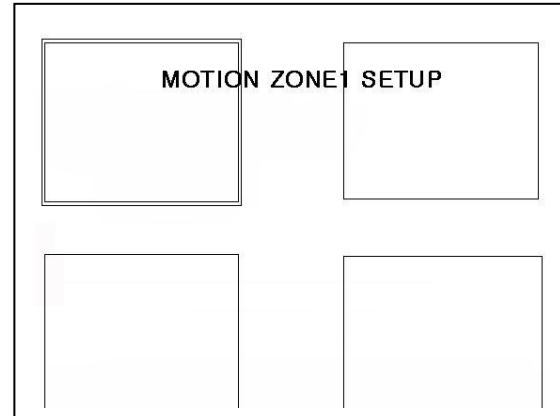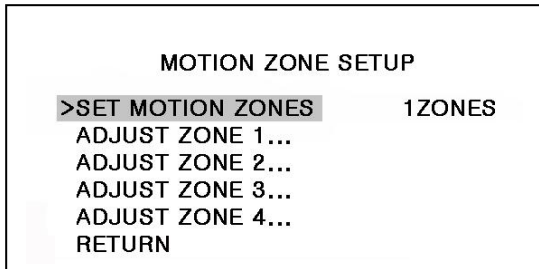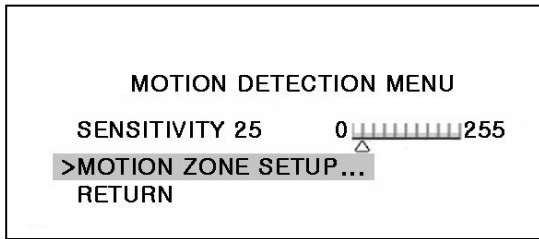To enter EXPOSURE menu, press ⬛ button at MAIN>PICTURE CONTROL.

```
        PICTURE CONTROL
  >WHITE BALANCE    <ATW Normal>
    COLOR SELECT        COLOR 1
    BRIGHTNESS
    SHARPNESS    2  -8 ⊔⊔⊔⊔⊔⊔⊔⊔ 8
                         △
    SATURATION   0  -8 ⊔⊔⊔⊔⊔⊔⊔⊔ 8
                         △
    GAMMA       45  25 ⊔⊔⊔⊔⊔⊔⊔⊔100
                         △
    RETURN
```

PICTURE CONTROL	Factory Default	Descriptions
WHITE BALANCE	ATW NORMAL	Sets ATW Normal, ATW Desat, ATW Xtnd or MANUAL. **ATW NORMAL** – Compensates automatically in range of 2800K-7500K. **ATW DESAT** – Compensates automatically in range of 2000K-11000K. In the range of 2000-2800K and 7500-11000K, white balance is gradually compensated. **ATW Xtnd** – Compensates automatically in range of 2000K-11000K. **MANUAL** – White balance can be adjusted by either KELVIN or R/B
COLOR SELECT	COLOR1	Provides three color tones.
BRIGHTNESS		BRIGHTNESS level is a kind of video output gain and is different from the iris level control. It can be set to MID-LOW, MIDDLE, MID-HIGH, HIGH and LOW. If it is set too high, the dynamic range is decreased.
SHARPNESS	2	Increase or decrease the sharpness of the picture. Too much sharpness can make image harsh and show more noise as well as line flicker at the edge of object in the picture.
SATURATION	1	High value makes color rich and vice versa.
GAMMA	45	Lower value improves the gain of the dark area but the image has less contrast.. Higher value reduces the gain of the dark area and makes the image more dark and contrastive. The image will loose the linearity for too high value.

9) SPECIAL

```
                SPECIAL

 >MOTION                    OFF
  PRIVACY MASK              OFF
  SYNC                      INT1
  LANGUAGE              ENGLISH
  VIDEO STANDARD           NTSC

  RETURN
```

SPECIAL	Default	Descriptions
MOTION	OFF	If it is set to ON and motion is detected, MOTION message will appear on the monitor. See '7.9.1 MOTION ' for settings.
PRIVACY MASK	OFF	If set to ON, it is available up to 6 privacy masks. See '7.9.2 PRIVACY menu' for settings.
SYNC	INT1	Sync is fixed to INT1.
LANGUAGE	ENGLISH	English is available only.
VIDEO STANDARD	NTSC	Able to switch NTSC or PAL.

① MOTION

```
        MOTION DETECTION MENU

   SENSITIVITY 25      0╙╙╙╙╙╙╙╙╙255
                          △
  >MOTION ZONE SETUP...
   RETURN
```

```
        MOTION ZONE SETUP

  >SET MOTION ZONES       1ZONES
   ADJUST ZONE 1...
   ADJUST ZONE 2...
   ADJUST ZONE 3...
   ADJUST ZONE 4...
   RETURN
```

```
              MOTION ZONE1 SETUP
```
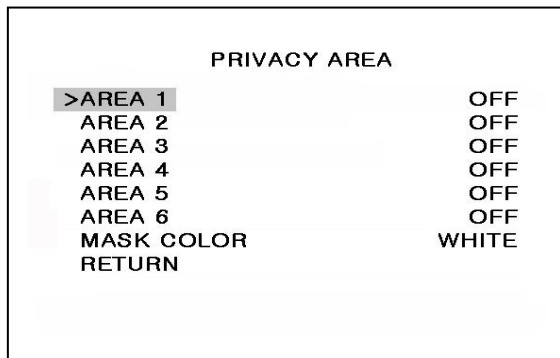
Up to 4 motion areas and the sensitivity can be set. The sensitivity is applied for all zones equally.

In adjusting each zone, the zone border line changes color when pressing ▣ button. Green enables enlarging, red enables reducing and white enables moving the zone by ▼, ▲, ▲, ▼buttons.

To exit MOTION ZONE SETUP, press ▣ button for 2 seconds.

② PRIVACY AREA

```
            PRIVACY AREA

  >AREA 1                OFF
   AREA 2                OFF
   AREA 3                OFF
   AREA 4                OFF
   AREA 5                OFF
   AREA 6                OFF
   MASK COLOR            WHITE
   RETURN
```

Up to 6privacy area can be programmed in size, position and mask color.

Use joystick to change size, position and mask color.

Right after pressing ⭕ button at ,ON..>, the 1st zone appears on top-left corner in orange.
The orange colored zone can be relocated in its location with ▼, ▲, ▲, ▼ buttons.

Right after one more pressing ⭕ button, the 1st zone changes to blue.
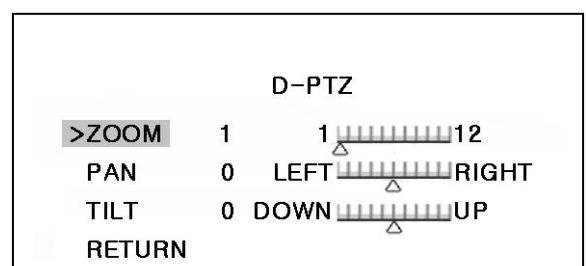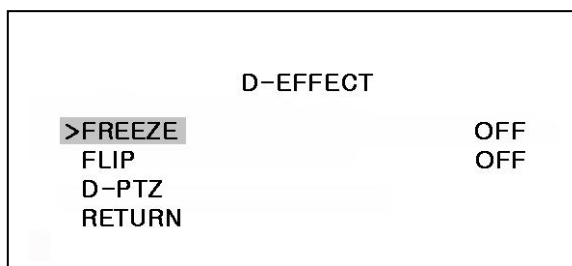Blue colored zone can be resized with . ▼, ▲, ▲, ▼ buttons

An example of mask when resizing by . ▼, ▲, ▲, ▼ buttons

An example of mask when relocating.

Press ⭕ button longer than 2 sec. to return to previous menu.

10) D-EFFECT

```
            D-EFFECT

    >FREEZE              OFF
     FLIP                OFF
     D-PTZ
     RETURN
```

```
            D-PTZ

    >ZOOM    1    1|||||||||12
                       △
     PAN     0   LEFT|||||||||RIGHT
                          △
     TILT    0   DOWN|||||||||UP
                        △
     RETURN
```

D-EFFECT	Default	Descriptions
FREEZE	OFF	Image freezes and shows the still image at the moment when set to ON..
FLIP	OFF	OFF(Normal display), H-FLIP(left & right flipped), V-FLIP(upside down flipped), H/V-FLIP(left & right flipped and upside down flipped.) Direction of joystick control should be flipped if V-flip is flipped to H/V-flip.
D-PTZ		Able to set digital zoom up to x12 and digital PAN/TILT if zoom ratio >1.

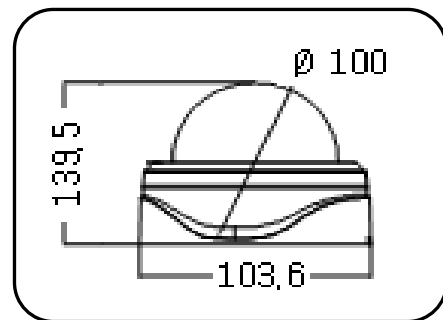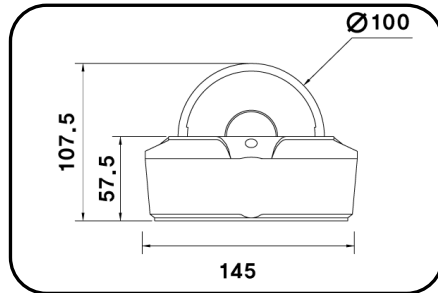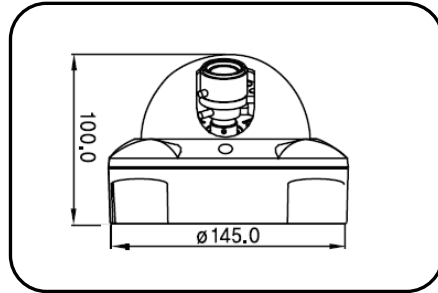| D-PTZ	Default	Descriptions
ZOOM	1	Digital zoom can set up to x12. x1 stands for ZOOM OFF.
PAN	0	Digital PAN can be set if ZOOM is set to >1.
TILT	0	Digital TILT can be set if ZOOM is set to >1.

11) EXIT

MENU-2	Descriptions
EXIT	Exits menu with discarding any changes.
SAVE AND EXIT	Exits menu after saving the parameters.
FACTORY SET	Restores and saves all parameters of factory settings. Camera resets and restarts automatically.

4. Troubleshooting

please contact the agent you purchased this product from.

Problems	Troubleshooting
Nothing appears on the screen.	• Please check the power connection. • Please check the video signal line connection. • Please check and make sure that the auto lens switch is set to DC (VIDEO) when using a VIDEO(DC) lens.
The video image is not clear.	• Please check if the lens is clean. Please clean the lens with a clean cloth or brush. • Please adjust the contrast feature of the monitor. • Please readjust the back focus of the camera.
The screen is dark.	• Please adjust the contrast feature of the monitor. • If you have an intermediate device, set the 75 / Hi-z properly, and check the terminals. • Please check if an auto iris lens is being used and adjust the brightness level.
There is a problem with the camera operation.	• Please check if an appropriate power source to the camera complies with the manufacturer's standard requirement, or if the voltage keeps changing.
The MOTION DETECTION function is not working.	• Please check if 'MOTION DETECTION' mode is turned on. • Please check if the MD LEVEL is too low. • Please check the setting of the MD AREA.
Colors are not quite right.	• Please check the 'WHITE BAL' setting
The screen is flickering.	• Please check if the camera is facing directly into sunlight or fluorescent light. • Please check if an auto iris lens is being used. • Please check the connection of the lens connector cable.
COLOR mode is not working.	• Please check if the AGC menu is set to the OFF position.
SENS-UP function is not working.	• Please check if the AGC menu is set to the OFF position. • Please check if the SHUTTER menu is set to MANUAL mode.

5. Dimensions

6. Specifications

▪ GENERAL

Model name	NTSC	PAL
Image Device	1/3" CMY Color DPS SENSOR (Pixim Seawolf D8800C series)	
Effective Pixels	768(H) x 540(V)	
TV system	NTSC, 525lines / 2:1interlace	PAL, 625lines / 2:1interlace
Scan frequency.	59.94Hz(V), 15.734Khz(H)	50Hz(V), 15.625Khz(H)
Synchronization	Internal/Line lock (Default: Internal)	
H. Resolution	690TV Lines	
Sensitivity	0.0008Lux Class sensitivity (0.002Lux@ 2x Sense-up)	
S/N Ratio	52dB with AGC OFF at 50IRE	
White Balance	2000~11000ºK Automatic tracking	
WDR Mode	(Low/Middle/High/Custom(User adjustment))	
Auto Iris Control	DC drive iris control. Level control is fixed internally.	
SENSE-UP	2X, 4X, 8X, 16X, 32X, 64X ESS	
Motion Detection	On/Off(4 Programmable Zone)	
D-PTZ	Up to X12 digital zoom	
FLIP	OFF / H-FLIP / V-FLIP / H/V-FLIP	
Privacy Zone	On/Off (6 Programmable Zone)	
Auto Iris Control	DC Drive Iris Control	
Flicker reduction	Yes (NTSC Japanese version only)	
OSD	Yes (Setup menu only)	
Video Output	VBS 1Vpp +/-10%, 75ohm	
Lens	2.8-10mm DC auto iris lens □	
	2.8-12mm DC auto iris lens □	
	mm □, mm DC auto iris lens □	
Operating Power	DC 12V (10.2-14.5V) Dual Voltage(DC12V/AC24V):Optional	
Power consumption	230mA	
Operating condition	-10ºC~+50ºC, 30~90% RH	

▪ DOME CASE

Dome Type			
Install Type	Indoor	Outdoor(IP66)	Outdoor(IP66)
Dimension(mm)	φ100(Bubble) x 139.5(H)	φ100(Bubble) x 103(H)	φ100(Bubble)x 107.5(H)
3 Axis	3 Axis	3 Axis	3 Axis
Material	Plastic Body, PC Bubble	PC Bubble, Aluminum Body	PC Bubble, Aluminum Body
Weight	560g	1.1Kg	1.1Kg