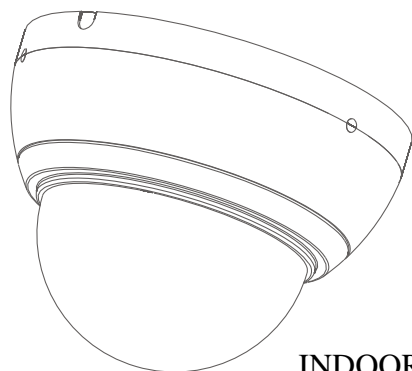


# Super High Resolution Day & Night Color Camera (Optional WDR)



VP-DOME



INDOOR  
-DOME

**LIMITATION OF LIABILITY**

THE INFORMATION IN THIS PUBLICATION IS BELIEVED TO BE ACCURATE IN ALL RESPECTS, HOWEVER, WE CANNOT ASSUME RESPONSIBILITY FOR ANY CONSEQUENCES RESULTING FROM THE USE THEREOF. THE INFORMATION CONTAINED HEREIN IS SUBJECT TO CHANGE WITHOUT NOTICE. REVISIONS OR NEW EDITIONS TO THIS PUBLICATION MAY BE ISSUED TO INCORPORATE SUCH CHANGES

# WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

# CAUTION



# EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with 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 is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## FCC COMPLIANCE STATEMENT

**FCC INFORMATION** : This equipment has been tested and found to comply with the 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.

**CAUTION** : Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

## CE COMPLIANCE STATEMENT

### **WARNING**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

# IMPORTANT SAFETY INSTRUCTIONS

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1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been moisture, does not operate normally, or has been dropped.
15. **CAUTION – THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.**
16. **Use satisfy clause 2.5 of IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.**



## **PRECAUTIONS**

Before installation, carefully read the manual to ensure correct operation and setup, heeding all warnings and instructions.

Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

Ensure manual is kept in good condition for future use.

Do not install the device near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.

Only use attachments/accessories specified by the manufacturer.

Should any liquid get into the housing, immediately disconnect the device from the power supply and have it checked by authorized personnel before reusing.

Do not install the device in a place of high humidity or where exposed to gas or oil.

Installation and servicing by authorized personnel only, adhering to local safety regulations.

Unless you are an authorized technician, never try to dismantle the device. To avoid electric shock, never remove the screws or covers.

If a camera, do not expose the device to radioactivity. It will cause serious damage to the CCD.

Use Certified/Listed Class 2 power source only.

## **Cleaning**

Clean the device with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzene as they might damage the finish of the unit.

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## CONTENTS OF PACKAGE

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Installation of the camera must be performed by qualified service personnel in accordance with all local and national electrical and mechanical codes.

Carefully remove the colour camera and its accessories from the carton and verify that they were not damaged in shipment.

The content of the package includes:

1. Camera in Housing
2. This Manual
3. Accessory Kit for Installing
4. Drilling guide label

# INTRODUCTION

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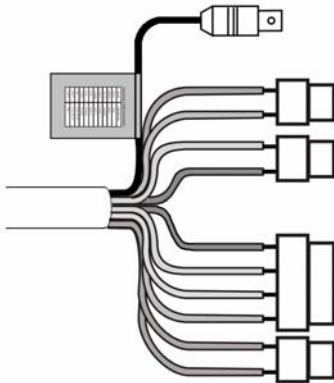
The camera provided high-quality image using SONY 1/3" CCD and digital signal processing LSIs.

## Features:

- 1/3" Super-HAD CCD
- Super high-resolution (700TVL)
- Wide Dynamic Range (~x512) (Optional)
- Day & Night(Auto, Manual, External, Filter delay, Change level adjust)
- 0.1Lux(Color), 0.01 Lux(BW) @ F1.2 50IRE
- Auto Electronic Shutter [1/50(60) ~ 1/100,000] and manual electronic shutter modes [1/50(60) ~ 1/10,000]
- Sens-Up (~x256)
- 2D-NR, 3D-NR
- UDF Function(Ultra Deep Field)
- Multi Camera Configuration Set (4-Sets/Night Profile, Ext DN Profile)
- **PVA/PVA+ (Personal Video Analytics)**
  - Very High Configurable.
  - Various Detection Methods(Motion, Loitering Object, Abandon, Scene Change, Unfocus, Windy Area)
  - Various Zone Event Detection Methods, and Event Area Combinations.
  - 8 Objects Trace, 4 Objects Display
  - **Concurrent Processing with All Detections, and All Objects.**
  - Two Counting Block.
  - Event String Sending (Editable String)
  - Digital Tracking(Using D-PTZ)
  - Various Detection Area(MAX. 10 area, Line, Rectangle, 4-Point polygonal)
- Back Light Compensation (EHLC, Auto, Spot)
- i-Freeze Function(Reduce recording space)
- Privacy Mask or Mosaic(MAX. 10 area/4-point polygonal/transparency)
- Digital Image Stabilization.
- Digital PTZ
- Digital Effect (H/V reverse, 180 degree rotate, inverse, freeze)
- Smart IR (30no 850nm IR)
- White Pixel Removal.
- Focus Aid Function.
- Color Rolling Suppression.
- System Lock (4-character password)
- Auto and Manual white balance modes
- Support Line-Lock external synchronization
- RS-485 Remote camera control
- Multi-Language
- User Certified / Listed Class 2 power source only
- Operates in 12VDC or 24VAC
- IP66 (VP DOME)



# CAMERA CONNECTIONS



Connection Cable Description

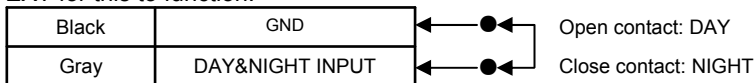
COLOR	Description
RED	AC24V/DC12V
WHITE	AC24V/DC12V
BLUE	RS485(-)
GREEN	RS485(+)
YELLOW	ALARM OUT
GRAY	DN EXT-IN
BLACK&WHITE	DN EXT-OUT
BLACK	GND
SKY BLUE	UTP+(Option)
PINK	UTP- (Option)

## 1) External Day/Night Control

Select Day/Night mode using external equipment, by connecting control lines to the appropriate terminals.

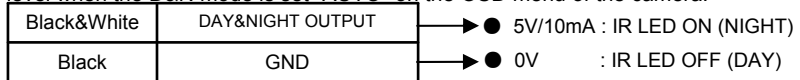
- **DAY&NIGHT EXTERNAL INPUT**

Switches the cameras D/N mode to either Day or Night based on the input status. Refer to the diagram below. The cameras D/N mode must be set to EXT for this to function.



- **DAY&NIGHT OUTPUT – Open Collector (5V/10mA)**

The camera turns on an external IR LED Lamp by detecting the sensitivity on the AGC level when the D&N mode is set "AUTO" on the OSD menu of the camera.



## 2) Alarm Out – Open Collector (5V/10mA)

- Motion detection signals are output through this port. (YELLOW AND GND)
- Active state is configurable.

## 3) Power Input Terminal

- RED & WHITE : These terminals accept 24VAC or 12 VDC. When using 12VDC it is recommended to use a DC power supply that can support an inrush current of 0.55A

## 4) Camera Control

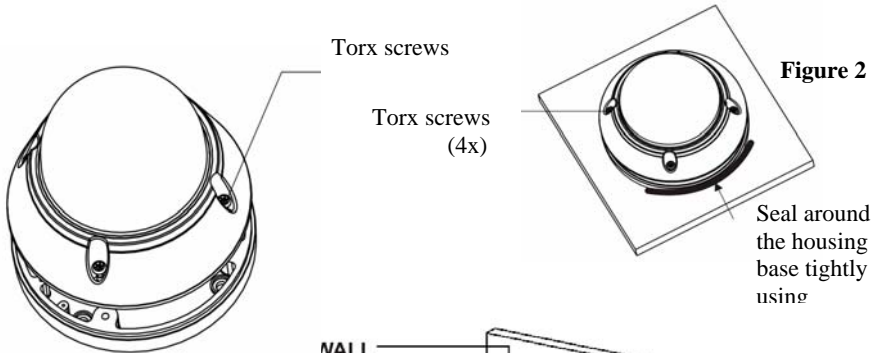
- GREEN : RS 485+
- BLUE : RS 485-

## 5) UTP (Option)

- Video signal through out the UTP Cable (SKY BLUE(+) & PINK(-))

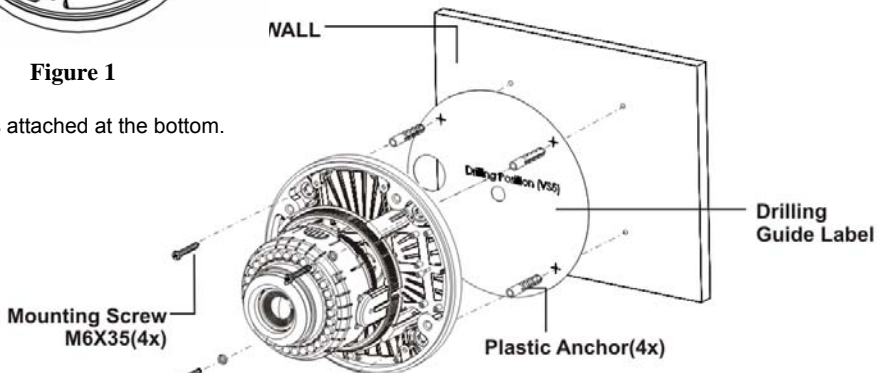
# INSTALLATION – VP DOME

1. Loosen the four torx screws located midway up the front of the housing leaving the screws intact in the front portion. **(Fig. 1)**
2. Drill the mounting location, using the Drilling guide. **(Fig. 3)**
3. Attach the housing to the ceiling using suitable fasteners, M6x35 tapping screws are supplied. Only use if they are suitable. **(Fig. 3)**
4. Close the housing using the loosen torx screws. **(Fig. 2)**



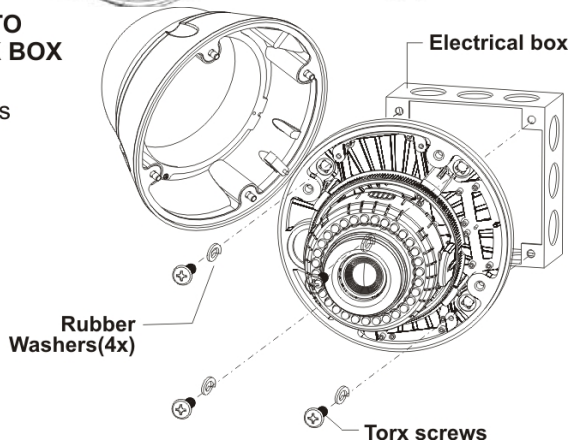
**Figure 1**

\*Label is attached at the bottom.



## • MOUNTING HOUSING TO AN ELECTRICAL BACK BOX

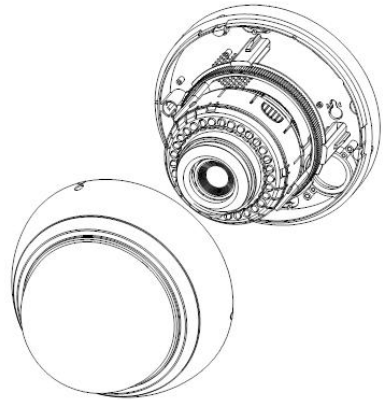
The housing can also be mounted on a 4s or 2s electrical box.



# INSTALLATION – INDOOR DOME

1. Using the drilling guide, drill the mounting holes and cable hole in place on the ceiling or wall.

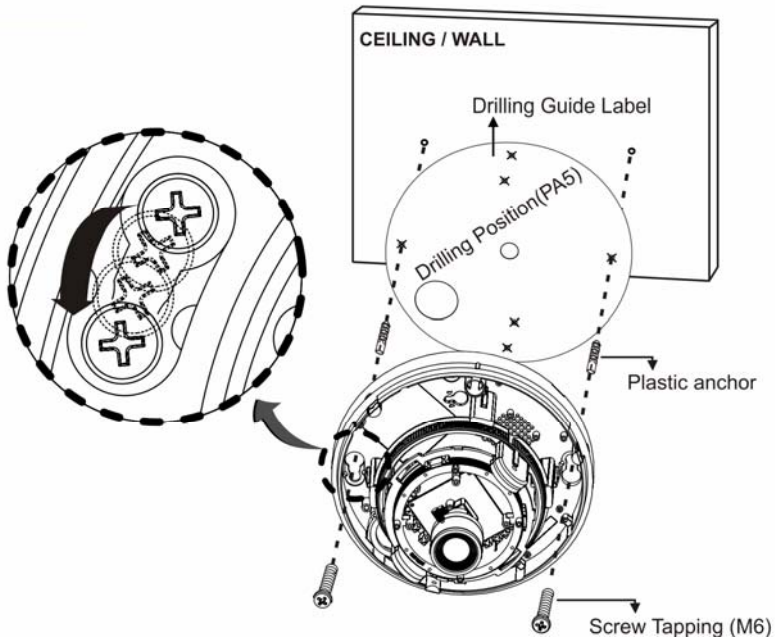
2. To remove dome cover, turn the dome body counterclockwise until locators reach end of travel and pull off. Push the liner on the sides where the patterns are put in the teeth of a comb and pull it out.



3. Attach the housing to the ceiling using suitable fasteners, M6x35 tapping screws are supplied. Only use if they are suitable. Turn the housing in the right direction about 16 degrees to lock in place.

4. The assembly of the dome body and liner is in reverse order of disassembly. Finally, lock dome body with locking screw (M3X5) from the accessory kit.

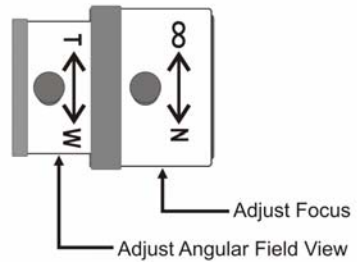
5.



# LENS ADJUSTMENT

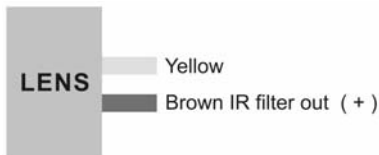
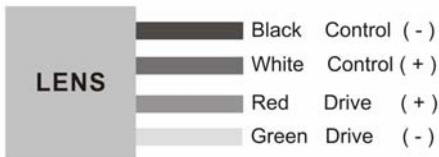
**Field of view:** Adjust setting from Telephoto (T) to wide (W) field of View.

**Focus:** Adjust lens focus from near (N) to infinity.

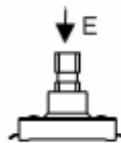
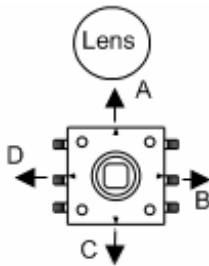
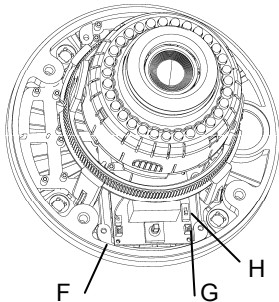


# DC AUTO IRIS LENS

	2.6-6mm	4-9mm	2.8~12mm	6-50mm
<b>Image Size</b>	1/3" CCD	1/3" CCD	1/3" CCD	1/3" CCD
<b>Focal Length</b>	2.6-6.0mm 5%	4.0-9.0mm 5%	2.8-12mm 5%	6.0-50mm 5%
<b>Ape. Ratio</b>	1 : 1.6 5%	1 : 1.6 5%	1 : 1.4 5%	1 : 1.6 6.9%
<b>Angular Field of View (Degree)</b>	DIAGONAL 2.6mm : 134.6 6mm : 59.2	DIAGONAL 4mm : 92.4 9mm : 39.2	DIAGONAL 2.8mm : 119.9 12mm : 28.8	DIAGONAL 6mm : 58.6 50mm : 7.1



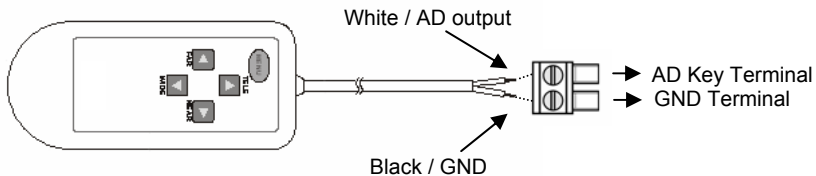
# CAMERA OVERVIEW



- A. Up
- B. Right
- C. Down
- D. Left
- E. Enter

- F. Test Video Output
- G. External AD Key Input
- H. BNC/UTP Switch

## External AD Key Control (optional)



## <Remarks>

### 1) Menu: Represent present menu subject on top of screen.

In case of used Multi-Camset, Represent CAM ID and "camset" name included.

#### Common Headers:

- : Currently active menu item is displayed. Move by Up/Down keys.
- : There is sub-menu. Press Enter key going to sub-menu.
- : Indicates the selected menu item.
- Item**: Displays the current control item you are adjusting.
- Item**: Disabled menu item or can't adjust.

### 2) Bottom Line Control Bar.

**Exit**: Exit menu mode. Pop-up menu rise when configuration changed.

- **Overwrite**: Save the changed data to save area.
- **Restore**: Cancel the changes. Read from save area.
- **Cancel**: Return to menu.

**Load**: Load saved data

- **Default**: Load default configuration from default area.
- **Backup**: Load saved configuration from backup area.
- **Cancel**: Return to menu.

**Save**: Save current configuration.

- **Save**: Save current configuration to save area.
- **Backup**: Copy configurations to backup area.
- **Cancel**: Return to menu.

**Back** : Return to previous menu.

#### NOTE:

\* There are 4 types of configuration area.

*Editing Area(No Save), Default(Read Only). Save Area(Use on Start), Backup  
\* Don't Power off while doing Save, Load, Backup, Overwrite*

## CAMERA ADJUSTMENT

---

### <White Balance>

- 1) **ATW/Wide Mode:** No limits in the range of color temperature.
- 2) **ATW/Indoor Mode:** Suitable for low color temperature.
  - **CRS(Color Rolling Suppression)** Mode supported.

#### **NOTE:**

*\* When you select the CRS will be processed in the following order:  
Checking Condition: Checking current environment within the range.  
Checking Variation: Measure color rolling range during 30 seconds.  
User can stop this action.  
No Need CRS: Variation is low. No need to use CRS function.  
Force CRS: Even if color variation is low, use CRS function.*

- **ATW Range:** Adjust AWB Range.
- **Convergence Shift:** Adjust AWB target.
  - R Variation:** Represent blue variation.
  - B Variation:** Represent red variation.
- 3) **ATW/Outdoor Mode:** Suitable for high color temperature. (Natural Light)
- 4) **Fix/Indoor Mode:** Fixed color temperature (3200 °K) mode, for indoor environment.
  - **R:** Adjust red color.
  - **B:** Adjust blue color.
  - **Push/Set:** Tracking WB of current screen, and represent R, B value.
  - **Default:** Restore R, B default value.
- 5) **Fix/FL Mode:** Fixed color temperature mode, for fluorescent lamp environment.
- 6) **Fix/Outdoor Mode:** Fixed color temperature (6300 °K) mode, for outdoor environment.

### <Auto Exposure>

#### **NOTE:**

*\* **MIN\_SHT (Minimum shutter speed)** : NTSC:1/60se/ PAL:1/50sec  
\* **MAX\_SHT (Maximum shutter speed)** : 1/100000sec  
\* **FLC\_SHT (Flickerless shutter speed)** : NTSC:1/100sec PAL:1/120sec*

#### 1) **AE Mode**

- **Full Auto:** DC Lens or Video Lens – Fix shutter speed to MIN\_SHT.  
Manual Lens - Operating as shutter mode.
- **Fast SHT (Fast shutter mode):** Adjust range - 1/250~1/10000
- **SHT Fix (Shutter Fix Mode):** shutter speed is fixed at a given value.

#### **NOTE:**

*\* If lighting is not enough, noise may be increase.  
\* If lighting is enough using AGC maximum, automatically decrease shutter speed.*

#### 2) **UDF (Ultra Deep Field)**

Depending on lighting conditions and Motion state, automatically adjust AE and DNR. Normally in low light environment, Sens-up feature may be missing the movement of objects and High AGC value makes increase the noise. UDF function effectively to improve this phenomenon.

#### **NOTE:**

*\* Motion is none : Noise removal mode.*

\* Motion is occurred: Fast screen update mode.

**3) Low Light:** If using UDF function, this function being disabled.

- **AGC:** Boost the signal and adjusting the brightness. (Off/Low/Mid/High)
- **Sens-Up:** By summing multiple fields, adjusting the proper brightness in low light conditions (2X~ 256X)
- **Apert :** In low light conditions, reduce noise by lowering the sharpness value.
- **Color:** In low light conditions, reduce noise by lowering the color value.

**4) WDR (Wide Dynamic Range) / WDR-Lite**

WDR function can not be used with the BLC and is recommended Full Auto Modes.

- **Visibility:** Increases sharpness of the high brightness region.
- **Comb Bal** (Combination Balance) :Adjust the balance of High&low luminance area.
- **Brightness:** Adjust brightness level of WDR.

**5) BLC:** Back Light Compensation / BLC function can not be used with WDR function.

- **EHLC (Excessive High Light Compensation) :** Fill to high brightness area with gray color. Clipping of the area is more bright area than the threshold value.

**Clip Th (Clipping Threshold) :** Adjust clipping level.

**Clip Mask (Clip Mask Brightness) :** Selecting gray color of clipping area.

- **Auto:** Weighting on the dark area of AE among the splitting 9 area.
- **Spot:** Weighting on the specified area of AE.
- **Anti-Sat** Weighting on the highlight area.

**6) Brightness:** Adjust AE reference level.

## <Mask>

**Privacy Zone can be configured with up to 10. Because they share area ID with PVA Zone, It can not be used same ID.**

**1) Zone:** Select mask number.

### NOTE:

*"If you see "PVA" in the "Func" menu PVA Function is currently being used in the area.*

**2) Func:** Select mask on/off.

**3) Color:** Select mask color (15 colors available).

**4) Transparency:** Change the mask transparency.

**5) Mosaic:** Making mosaic current area.

**6) Frame:** Border display current area.

**7) Shape:** Select the shape of mask (4-point polygon or rectangle)

- **Rect (Rectangle)**

Adjust rectangle with 4-arrow keys. Press [ENTER] key is to finish edit area.

- **Poly (4-Point Polygon/Each point can move)**

If you select one of "a,b,c,d", the active point is displayed. Move the point with 4-arrow keys. Press [ENTER] key is to finish edit area.

### NOTE:

*\* For more than 180 of interior angle is not permitted.*

- **Posi:** Adjust area position with 4-arrow keys.

## <PVA/PVA+ (Personal Video Analytics)>

PVA is our unique name of our video analytics.

If you exit menu, doing Initialize started while 4~5 seconds the background.


During initialization the background, it is good to be none of moving objects.

When Day / Night mode is changed or Cam Set is changed, the background of the re-initialization performed.

**Global Functions:** This functions being performed in the entire area.


- **Output Select:** It must be specify the outputs, each function will be enabled.

Press [Enter Key], to select output of each detection zone.


 **Alarm:** Trigger alarm to output port.


 **Communication:** Event string sends on RS-485

 **Screen:** Display on screen.

 **Back:** return to previous menu.

- **Detections**


 **Motion:** General motion detection

 **Loitering:** Within a set period of time, detect loitering objects of entire screen.

**NOTE:**

\* Please don't use as a signal for video recording start.

\* The result of loitering detection can be inaccuracy.

 **Abandon/Absent:** Detect the difference to stored background.

**NOTE:**

\* Please don't use as a signal for video recording start.

\* The result of abandon/absent detection can be inaccuracy.

 **Scene Change:** Detect a change in the screen.

**NOTE:**

\* It is good for detecting scene change, including vertical lines or high contrast objects of the background.

\* Please don't use as a signal for video recording start.

\* The result of scene change detection can be inaccuracy.

 **Windy Area Detection:** Detect continuous movement caused by wind or etc.

If same movement occurs in same area, alarm is ignored in this area.

If no motion is detected for a period of time, windy area turns off.

**NOTE:**

\* Please don't use as a signal for video recording start.

\* In Simple mode is not supported.

\* The result of windy area detection can be inaccuracy.

## 1) Zone Base Functions

Max 10 Zone can be configured.

**NOTE:**

\* Because they share area ID with Privacy mask, it can not be used same ID.

- **Zone:** Select zone ID.

- **Func(Function) :** Zone Function On/Off (Blinking enabled area).

- **Shape:** Select area shape.

**Color:** Select area's frame color.

**Rect(Rectangle) :** Adjust rectangle with 4-arrow keys.

Press [ENTER] key is to finish edit area.

**Poly (Polygon)**

If you select one of "a,b,c,d", the active point is displayed.

Move the point with 4-arrow keys. Press [ENTER] key is to finish edit point.

**NOTE:**



\* For more than 180 of interior angle is not permitted.

**Line:** Select Start/End Point. If you select one of start/end, the active point is displayed. Move the point with 4-arrow keys. Press [ENTER] key is to finish edit point.

**Posi:** Adjust area position with 4-arrow keys.


- MD Event

**NOTE:**

\* The result of MD event detection can be inaccuracy.


**Zone:** Configurations for various zone events. Following area, possible events are different.



**Output Select:** Press [Enter] key on icon to watching event, popup box appear.

 **Alarm:** Trigger alarm to output port.

 **Communication:** Event string sends on RS-485

 **Screen:** Display on screen.

 **Back:** return to previous menu.











 1,  2 : Send event to counting machine. (**OFF** : No Effect /







**INC** : Increment counting value. / **DEC** : Decrement counting value)

**NOTE:**

\* The result of counting value can be inaccuracy.

**Screen:** Printed event at bottom side by side scrolling.

Icon	Subject	Range	
	<b>Motion</b>	Rect,Poly,Line	Motion occurred.
	<b>Motion Inside</b>	Rect, Poly	Motion occurred in the area.
	<b>Move Into</b>	Rect, Poly	Object on outside moves into the area.
	<b>Appear Inside</b>	Rect, Poly	Object which appeared inside. *) <i>In Simple mode is not supported.</i>
	<b>Move Out</b>	Rect, Poly	Object moves out. *) <i>Please don't use as a signal for video recording start.</i>
	<b>Appeared &amp; Move Out</b>	Rect, Poly	Object which appeared inside, and moves out *) <i>Please don't use as a signal for video recording start.</i> *) <i>In Simple mode is not supported.</i>
	<b>Disappear Inside</b>	Rect, Poly	Object disappeared inside. *) <i>Please don't use as a signal for video recording start.</i> *) <i>In Simple mode is not supported.</i>
	<b>Moved In &amp; Disappear</b>	Rect, Poly	Objects from outside, move into inside, and disappears inside. *) <i>Please don't use as a signal for video recording start.</i> *) <i>In Simple mode is not supported.</i>
	<b>Loitering</b>	Rect, Poly	Detect moving object within the zone during a time. *) <i>Please don't use as a signal for video recording start.</i> *) <i>In Simple mode is not supported.</i>
	<b>Abandon/Absent</b>	Rect, Poly	Detect different region to stored background. *) <i>Please don't use as a signal for video</i>

			<i>recording start. *) In Simple mode is not supported.</i>
	<b>In &amp; Out Direction</b>	Rect	Detect object moving. From top to enter of area, detecting direction of moving out. *) <i>Please don't use as a signal for video recording start. *) In Simple mode is not supported.</i>
	<b>In &amp; Out Direction</b>	Rect	Detect object moving. From right to enter of area, detecting direction of moving out. *) <i>Please don't use as a signal for video recording start. *) In Simple mode is not supported.</i>
	<b>In &amp; Out Direction</b>	Rect	Detect object moving. From left to enter of area, detecting direction of moving out. *) <i>Please don't use as a signal for video recording start. *) In Simple mode is not supported.</i>
	<b>In &amp; Out Direction</b>	Rect	Detect object moving. From bottom to enter of area, detecting direction of moving out. *) <i>Please don't use as a signal for video recording start. *) In Simple mode is not supported.</i>
	<b>Move Clockwise</b>	Line	Event will occur the object moves in a clockwise direction that start around. *) <i>Please don't use as a signal for video recording start.</i>
	<b>Move Conter-Clockwise</b>	Line	Event will occur the object moves in a counter-clockwise direction that start around. *) <i>Please don't use as a signal for video recording start.</i>

**Path Event:** Detect route between two zones. (Max.10 path detection is possible).

**NOTE:**

- \* Disabled zone can not be configured.
- \* In Simple mode is not supported.
- \* The result of path event detection can be inaccuracy.

**Output Direction Setup:** same as zone output configuration.

**Clear All:** All path combinations clear.

2) **Env.Setup(Environment setup)** : Configurations for each PVA functions.

- **Md Sens(MD Sensitivity)** : Adjust motion sensitivity.(HW sensitivity)
- **Loiter Time (min):** Time for judge to loitering object.
- **Abandon/Absent Setup**
  - Sens(Sensitivity)** : Adjust sensitivity of abandon/absent detection.
  - Det Time (min):** Time for judge to absent/abandon area.
  - Rst Time (sed):** Time for maintain event. After this, background will be update.
- **Scn Chg Setup (Scene Change Setup)**
  - Sens(Sensitivity)** : Adjust sensitivity of scene change detection.
  - Chg Ratio:** Adjust judgment ratio that changed from the stored background.
  - Det Time (sec):** Time for judge scene changing.
  - Rst Time (sec):** Time for maintain event. After this, background will be update.
  - Unfocus** : Detection on/off of unfocused state/defocused state.
- **Windy Setup (Windy Area Detection Setup)** : Not applied in Simple PVA mode
  - Sens(Sensitivity)** : Adjust sensitivity of windy object detection.
  - Det Time (sec):** Time for judge to windy object.

**Rst Time (sec):** Time for release to windy object that staying with no motion  
**3) Display Setup:** Configuration for information on screen.

**NOTE:**

\* *Priority: Abandon/Absent > Loiter > Moving Object > Windy*

\* *Same priority: large object size order*

**Alarm:** Represent alarm icon on right-up side by of screen.

**Counter:** Represent counting on left-bottom. (Det Only: When an event occurs)

**Zone Area:** Represent active zone.

**Moving Object:** Represent moving object with white rectangle.

**Loitering:** Represent loitering object with green rectangle.

**Abandon/Absent:** Represent abandon/absent area with wine colored rectangle.

**Windy Area:** Represent moving object with violet rectangle.

**4) dTracking Setup :** Configurations for digital Pan/Tilt/Zoom.

**NOTE:**

\* *Prority : Tracking priority : Zone > Loitering > Abandon/Absent > Obj.*

\* *Maximum 4 objects can be represented.*

\* *Same priority: Continuing detect. And Obj. > Size*

- **All Object:** Tracking all detected object.
- **Loitering:** Tracking detected loitering object.
- **Abandon/Absent:** Tracking detected absent/abandon area.
- **Zone:** When zone event rising, tracking the area.

## <Picture/DNR (Picture/Digital Noise Reduction)>

Menu for adjustment of video quality and DNR.

**1) 2D-NR:** Adjust 2D-NR strength.

**2) 3D-NR:** Adjust 3D-NR strength. Remove noise by summing several frames.

**3) DNR Demo:** Represent DNR effect. Left side is none DNR screen,  
Right side is DNR screen.

**4) Color Enh(Color Enhance) :** Adjust of color strength.

## <Effect>

**1) Freeze:** When [ENTER] key pressed, still image will be output on the screen.

**2) d-Effect:** Off/Rotation/Mirror/V Flip

**3) Nega (Negative Picture) :** Inverse color effect.

**4) DIS (Digital Image Stabilization) :** Compensation to image vibration.

Because of this function used d-ptz, screen magnification will be changed.

**5) dPTZ Preset :** Configuration for dPTZ preset. It will be applied when menu exit.

- **Zoom:** Adjust magnification.
- **Pan&Tilt:** Adjust Pen/Tilt position.
- **Up/Down:** Adjust tilt position.
- **Left/Right:** Adjust pan position.

**6) i-Freeze:** Select term of refresh rate for output video. This function is useful to reduce the recording data storage. When motion is detected while i-Freeze, image is refresh to live mode. So not only reducing the recording data but also not to miss object movement.

- **No Motion(s):** Adjust Interval while no motion.
- **Motion (0.1s):** Adjust Interval while motion exists.

## <System Setup>

**1) General**

- **Cam Info:** Display camera basic information.

**NOTE:**

\* *Cam ID/Baud rate/Protocol/Lens Type/CCD Type/Video System/Firmware Version*

- **System Lock:** System locking by 4-characters PID (Lock/Unlock)
- **Change PID:** Change PID used in the system lock.

**NOTE:**

\* *Enter PID: Input previous password. Default PID is "0000".*

\* *Enter New PID: Input new password.*

\* *Retype New PID: Confirm of new password.*

- **Title:** Change camera title. Max. 8-characters.
- **Display:** Configurations for display camera ID&title.
  - Cam ID:** Select camera ID display on/off.
  - Title:** Select title display on/off.
  - Display Pos:** Change position the string location.
- **Language:** Change menu&OSD language.

**2) Setup Tools**

- **System Config**

**Multi-Camset:** Select On (User can use 4 configuration sets)/off

**Video Analytics:** Select PVA mode. (Simple PVA/ PVA+)

**Communication:** Configuration for RS-485.

**Cam ID:** Select the camera ID (001 - 255).

**Baud Rate:** Select serial communication speed (2400/4800/9600/19200).

**Protocol :** RS-485 protocol. (Auto, FASTRAX/PELCO-D/PELCO-P)

**Event Out:** Off, Text-Out, FxLink

**Event Strings:** Select&edit sending strings for PVA/PVA+ Events.

**NOTE:**

\* *Text Out: Send event string through RS-485 line.*

*This function can work with IDIS DVR's Text-in feature.*

\* *FxLink: Send event to PC application.*

- **WPC (White Pixel Compensation) :** Compensation for defected pixel on CCD.

**NOTE:**

\* *While operating on WPC, Iris will be closed automatically if you using DC/IRIS Lens.*

*For manual lens, you have to block the lens hole.*

**Static/Auto:** Automatic detecting for defected pixel & compensation.

**Proceeding:** Doing detection for white pixel.

**NOTE:**

\* *If brightness is too high, stop the process and print message "Bright Too High".*

\* *This function can compensate max. 63 points.*

\* *If detected points are more than 63 points, repeats this detection by changes conditions.*

\* *If more than 63 point while changing conditions, stop the process, and print "Too Many WH Pixels"*

\* *User can stop the proceeding while on operating.*

**Done:** Complete white pixel detection.

**View** Detected WP: Print detected pixel on screen.

**Retry:** Restart WPC process.

**Accept:** Store WPC result, and return to precious menu.

**Dynamic**

Automated white pixel compensation for not compensated pixel by static method,  
No limits of compensation pixel number.  
Select level (Low/Mid/High). Higher value setting is compensating more pixels.

**NOTE:**

*\* If the scene contains high frequency components can cause a loss.*

**Static/Manual:** Manual white pixel compensation by appointment method.

Move Finder window using 4-arrow keys.

**Marker:** Expand finder window using digital zoom.

Move compensation pixel using 4-arrow keys.

**Register:** Adding compensation pixel.

**NOTE:**

*\* Registered points are more than 63 points, print "Memory Full" and stops action.*

**Marker:** Use this if user sees other points.

**Finder:** Use this when you need to move finder screen.

**Undo:** Cancel the registered point.

**Done:** Return to previous menu.

**Unregist:** Deleting registered pixel.

**NOTE:**

*\* No more exist register pixel, Print "Memory empty" and stops action.*

**Marker:** Select for if you continue unregister action.

**Undo:** Cancel the unregistered point.

**Done:** Return to previous menu.

**Default:** Recover to factory adjustment state.

**- Focus Aid**

For prevent the spread of light, AE mode changed to Shutter Fix Mode.

**Min SHT (sec):** Adjust minimum shutter speed.

**Zoom:** Zoom to focus window.

**Adj: Adjust.**

**Start:** Start measurement of maximum focus value.

**Stop:** Stop the measurement. And initialize maximum focus value.

**NOTE:**

*\* FAD Max: Hold maximum focus value.*

*\* FAD Val: Print present focus value.*

*\* Usage:*

*Step1: Point target to focus window.*

*Good target: higher contrast, more complex patterns.*

*Step2: Minimize the spread of light with adjust shutter speed.*

*Step3 : Turn the lens focus ring to end, start "Adj"*

*Step4: Turn the lens focus ring slow by opposite side, record max focus value.*

*Step5: If current fad value is lower than Max fad value, stop turning focus ring.*

*Step6: Adjust focus ring to be closer to the max fad value.*

**3) Lens :** Select lens (DC lens/Video lens/Manual Lens)

- Iris Speed: Only for DC/Video Lens, Adjust Iris speed.

**NOTE:**

*\* If iris speed is too high, it can occur AE hunting.*

*\* If iris speed is too low, IRIS adjusting operates too slowly.*

**4) LLC (Line Lock Control)**

Active only used AC Power. - Int(Internal)/Ext(External)

If mode is set to Ext, Sync Phase can be adjusted.

## 5) Day/Night

- **Detection:** Configuration D/N change method. (Internal/Fix-Day/Fix-Night/EXT-IN)

**Internal:** Operating DN changing with internal detection algorithm.

**Fix-Day:** Day mode fixed.

**Fix-Night:** Night mode fixed.

**External:** Work with EXT-IN mode. If port input voltage is high, DN mode is Night. And If port w voltage is low, DN mode is Day.

- **IR Led Adj.:** Adjust IR led brightness (Auto/Lowest/Low/Mid/High/Highest).

- **Burst:** Select burst signal on/off at night mode.

- **Delay (sec):** Select Delay time in D/N mode changing.

- **D/N Threshold:** Configuration for threshold level in D/N mode changing.  
(Low/Mid/High/User)

### NOTE:

\* *User Mode : Difference of D>N Level and N>D Level must be more than 2, and D>N must be less than N>D.*

*D>N: Adjust level that changing point of Day -> Night.*

*N>D: Adjust level that changing point of Night -> Day.*

- **OPD:** Optical detector value. Represent present physical brightness.

- **Use Alt Camset(N), Alt Camset:**

Select camera configuration set to apply in night mode.

### NOTE:

\* *Not support in single camset mode.*

## 6) EXT-I/O

- **D/N OUT (Day&Night Output) :** Select output method, No Func/D/N Out/AUX0

**AUX0:** User Defined output 0.

**Set AUX0:** Output voltage through to D/N OUT port (Open Collector (5V/10mA))

- **ALARM OUT:** Select output method, No Func/Alarm Out/AUX1

**AUX1:** User Defined output 1.

**Set AUX1:** Output voltage through to D/N OUT port (Open Collector (5V/10mA))

- **D/N IN:** Select input method. No Func/Alt Camset.

**Alt. Camset:** When inputted signal, change camera configuration.

Select camset number

7) **Counter:** Configurations for output of counting machine.

- 🖱️1, 🖱️2 : Represent counting value / adjust offset value.

- **Alarm On Zero:** When counter value reached zero, will be alarmed.

**Preset Cnt1, Cnt2:** When counter reached zero, counter value will be reset this value.

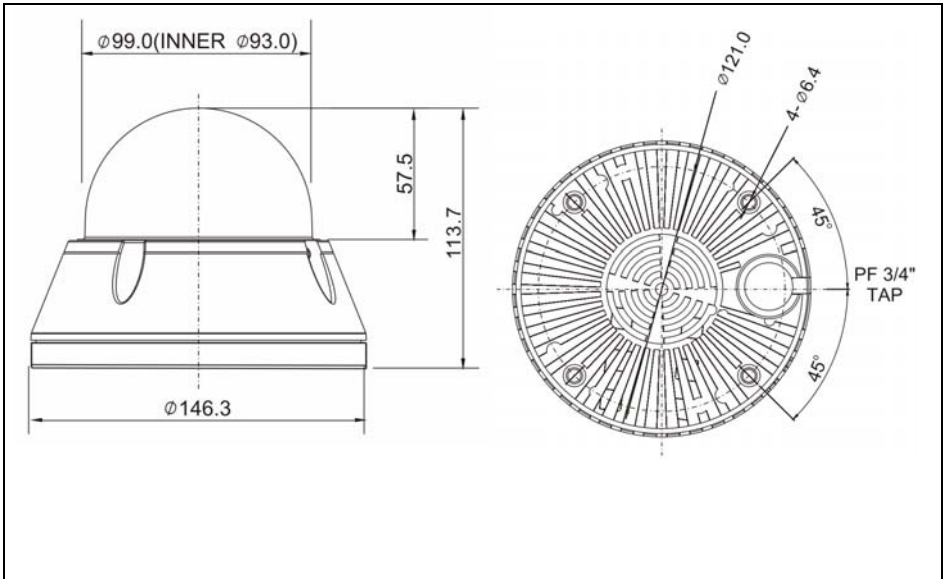
**Reset:** Initialize counter. (Default Zero, or Alarm on zero enabled: Offset Value)

**TextOut to Comm:** Event string sends through RS-485 lines.

### NOTE:

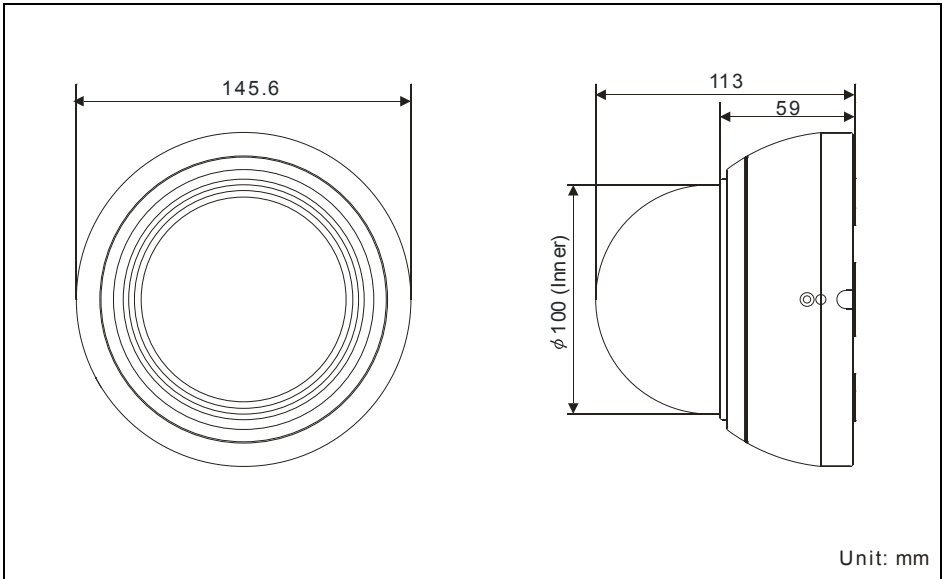
\* *Event Out must be activated.*

# EXTERNAL DIMENSION – VP DOME



<p><b>Window Size</b></p>	<p>0.1 in. (2.5mm thick),              impact-resistant P.C (LEXAN)              3.93 in. (10cm) diameter</p>
<p><b>Cable Entry</b></p>	<p>One 1" (25mm) opening holes</p>
<p><b>Weight – Unit:</b>  <b>Shipping:</b></p>	<p>1.66 lb. (760 g)              2.11 lb. (960 g)</p>

# EXTERNAL DIMENSION – INDOOR DOME



<p><b>Window Size</b></p>	<p>0.1 in. (2.5mm thick),              impact-resistant P.C (LEXAN)              3.93 in. (10cm) diameter</p>
<p><b>Cable Entry</b></p>	<p>One 1" (25mm) opening holes</p>
<p><b>Weight – Unit:              Shipping:</b></p>	<p>0.99 lb. (450 g)              1.41 lb. (640 g)</p>



# SPECIFICATIONS (WDR)

ITEM	NTSC	PAL
<b>ELECTRICAL</b>		
Input Voltage	DUAL(DC12V, AC24V) ±10%	
Power Consumption	IR Off: 3.5 Watts(300mA) / IR On:6.0 Watts(500mA)	
Power Connector	2-Pin Terminal Block	
<b>VIDEO</b>		
Image Device	1/3" Sony Super-HAD II PS 960H CCD	
Total Pixels	1020(H) x 508(V)	1020(H) x 596(V)
Effective Pixels	976(H) x 494(V)	976(H) x 582(V)
Scanning System	2:1 Interlace	
Sync. System	Internal / Line Lock (Phase Control)	
Scanning Freq.	15.734KHz(H),59.95Hz(V)	15.625KHz(H),50Hz(V)
Horizontal Resolution	700TVL	
Min. illumination	0.1 Lux(Color), 0.01 Lux(BW), 0.0001 Lux(Sens-Up B/W) @ F1.2 50IRE	
IR LED	30no 850nm IR LEDs / Distance : 30m	
S/N (Y signal)	More than 50dB	
Video Output	CVBS 1.0Vp-p, 75Ω , UTP(OPTION)	
<b>OPERATIONAL</b>		
WDR	x512(Level Adjust) , WDR-Full	
White Balance	ATW/Wide, ATW/Indoor, ATW/Outdoor, Fix/Indoor, Fix/Outdoor, Fix/FL, CRS, ATW Range Adjust	
Exposure	Full Auto , Manual Shutter , Flickerless, Low Light(AGC, Sens-Up), UDF(Ultra Deep Field)	
Electronic Shutter Speed	1/60 ~ 1/10,000 Auto : ~ 100,000	1/50 ~ 1/10,000 Auto : ~ 100,000
Dynamic Noise Reduction	2D + 3D : Gain Adjust, DNR Demo	
Day & Night	Auto , Day , Night , Ext	
Sens-up	x256	
Backlight Compensation	EHLC , AUTO , SPOT	
Motion Detection& Video Analytics	PVA(Motion, Loitering, Abandon, Scene Change, Unfocus, Windy Area)/ Simple(Motion, Loitering, Abandon, Scene Change)	
Digital Image Stabilizer	OFF / ON	
Privacy Masking	Max 10 ( 4-point polygonal, Color, Transparency, Mosaic )	
Digital Zoom	x4 / D-PTZ Support	
Digital Image Effect	V-FLIP, MIRROR , ROTATION , NEGA&POSI , FREEZE , SHARPNESS, STILL SHOT	
Display	Camera Name : ON / OFF/Adjustable Location Camera ID : ON / OFF/Adjustable Location	
Language	English,German(TBD),French(TBD),Portuguese(TBD),Spanish(TBD)	
Camera ID	001~ 255	
Camera Control	Tact Switch , RS485	
Protocol	Auto, FASTRAX , PELCO-D, PELCO-P	
<b>Connector &amp; etc</b>		
Power input	Terminal block	
Video output	BNC, UTP	
Lens mount	Fixed Mount	
Lens	D&N DC IRIS Vari-Focal Lens	
Operating Temp.	-10°C to +50°C	
Operating humidity	Less than 90%	
External dimension	VP: 146.3(W) x 113.7(H) / INDOOR: 145.6(W) x 113(H)	
Weight	VP: 760g / INDOOR: 450g	

# SPECIFICATIONS (WDR-Lite)

ITEM	NTSC	PAL
<b>ELECTRICAL</b>		
Input Voltage	DUAL(DC12V, AC24V) ±10%	
Power Consumption	IR Off: 3.5 Watts(300mA) / IR On:6.0 Watts(500mA)	
Power Connector	2-Pin Terminal Block	
<b>VIDEO</b>		
Image Device	1/3" Sony EXview 960H CCD II	
Total Pixels	1020(H) x 508(V)	1020(H) x 596(V)
Effective Pixels	976(H) x 494(V)	976(H) x 582(V)
Scanning System	2:1 Interlace	
Sync. System	Internal / Line Lock (Phase Control)	
Scanning Freq.	15.734KHz(H), 59.95Hz(V)	15.625KHz(H), 50Hz(V)
Horizontal Resolution	700TVL	
Min. illumination	0.1 Lux(Color), 0.01 Lux(BW), 0.0001 Lux(Sens-Up B/W) @ F1.2 50IRE	
IR LED	30no 850nm IR LEDs / Distance : 30m	
S/N (Y signal)	More than 50dB	
Video Output	CVBS 1.0Vp-p, 75Ω , UTP(Option)	
<b>OPERATIONAL</b>		
Image Enhancement	WDR-Lite	
White Balance	ATW/Wide, ATW/Indoor, ATW/Outdoor, Fix/Indoor, Fix/Outdoor, Fix/FL, CRS, ATW Range Adjust	
Exposure	Full Auto , Manual Shutter , Flickerless, Low Light(AGC, Sens-Up), UDF(Ultra Deep Field)	
Electronic Shutter Speed	1/60 ~ 1/10,000 Auto : ~ 100,000	1/50 ~ 1/10,000 Auto : ~ 100,000
Dynamic Noise Reduction	2D + 3D : Gain Adjust, DNR Demo	
Day & Night	Auto , Day , Night , Ext	
Sens-up	x256	
Backlight Compensation	EHLC , AUTO , SPOT	
Motion Detection& Video Analytics	PVA(Motion, Loitering, Abandon, Scene Change, Unfocus, Windy Area)/ Simple(Motion, Loitering, Abandon, Scene Change)	
Digital Image Stabilizer	OFF / ON	
Privacy Masking	Max 10 ( 4-point polygonal, Color, Transparency, Mosaic )	
Digital Zoom	x4 / D-PTZ Support	
Digital Image Effect	V-FLIP, MIRROR , ROTATION , NEGA&POS1 , FREEZE , SHARPNESS, STILL SHOT	
Display	Camera Name : ON / OFF/Adjustable Location Camera ID : ON / OFF/Adjustable Location	
Language	English,German(TBD),French(TBD),Portuguese(TBD),Spanish(TBD)	
Camera ID	001~ 255	
Camera Control	Tact Switch , RS485	
Protocol	Auto, FASTRAX , PELCO-D, PELCO-P	
<b>Connector &amp; etc</b>		
Power input	Terminal block	
Video output	BNC, UTP (Option)	
Lens mount	Fixed Mount	
Lens	D&N DC IRIS Vari-Focal Lens	
Operating Temp.	-10°C to +50°C	
Operating humidity	Less than 90%	
External dimension	VP: 146.3(W) x 113.7(H) / INDOOR: 145.6(W) x 113(H)	
Weight	VP: 760g / INDOOR: 450g	

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**WDR Super High Resolution  
Day & Night Color Camera**

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