FULL HD MEGA PIXEL CAMERA

FULL HD
MEGA PIXEL
IR BULLET CAMERA
USER'S MANUAL

VEILUX® The Art of Surveillance
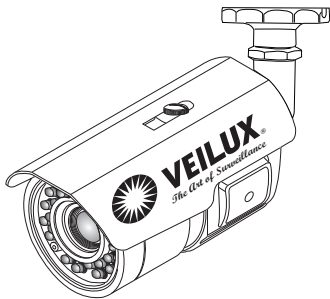
- ■ 1/3" Panasonic CMOS sensor
- ■ Full HD Resolution
- ■ DAY & NIGHT
- ■ WDR (Wide Dynamic Range)
- ■ DNR (Digital Noise Reduction, 2D+3D)
- ■ Privacy mask Function
- ■ On Screen Display
- ■ Intelligent motion detection
- ■ HD-SDI/CVBS Output
- ■ Multi Protocol(Pelco-D, Pelco-P)

HD 003

Precaution

Do not Keep the camera face to strong light directly

Do not install the camera in extreme temperature conditions .

Do not disassemble the camera even if troubles happened

To avoid malfunctions, never use the camera close to a gas or oil leak

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

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

Do not install the camera under unstable lighting conditions

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

Components

SUN SHIELD

SCREW

MANUAL

SERVICE VIDEO

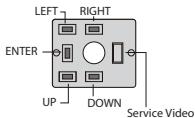L-WRENCH

Option

RS-485 Terminal Block

1. Features

- 1/3" Panasonic CMOS sensor
  2,227,080pixels(Total) / 2,122,848pixels(Active)

- Full HD Resolution
  1920x1080p / 30fps
  1280x720p / 60fps

- DAY & NIGHT
  This camera supports filter changed day and night function using DC Motor
  controller. It can be changeable OLPF day to night depending on the luminance
  level using DC Motor. It can be also controlled by external Day and Night port.

- WDR (Wide Dynamic Range)
  WDR, more effectively than previous models,
  by applying an optimum fusion ratio when combining the high speed
  shutter used in bright areas and the low speed shutter used in dark areas.

- DNR (Digital Noise Reduction, 2D+3D)
  The DNR technology eliminates noise thus generating a distinct and clear
  image. This camera DNR function utilizes both an adaptive 2D filter
  reducing noise in the brightness of the image and an adaptive 3D filter
  reducing noise caused by movement.

- Privacy mask Function
  The privacy zone function makes it possible to make specific areas of the
  scene from view.

- On Screen Display
  This camera supports the OSD function. And so, the camera can be controlled
  by selecting text displayed on the monitor screen.

- Intelligent motion detection
  You can transmits an alert signal when it detects motion of an object on
  the screen. This feature is useful when you have to monitor several screens
  simultaneously.

- Output
  Digital output : HD-SDI
  Analog output : NTSC, PAL Composite (without WDR)

- Protocol
  This camera supports the multi-protocol (Pelco-D, Pelco-P)

2. Names and Functions of Parts
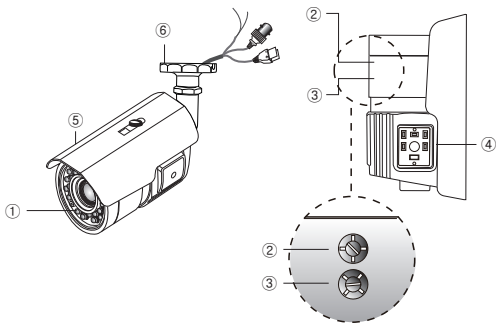
① IR LEDs
② Focus Handle
   Used to provide for accurate of an object within the
   lens field of view
③ Zoom Handle
   Used to adjust zoom magnification by turning
④ OSD Board

⑤ Sun-Shield
⑥ Bracket

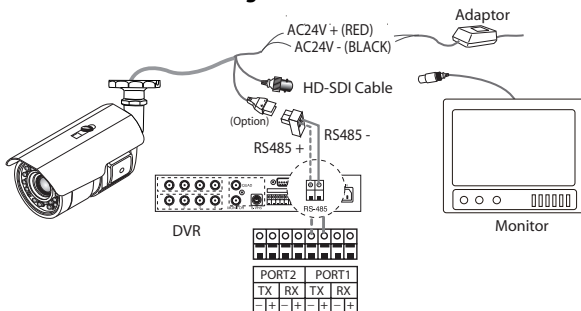## 3. Installation & Connection

AC Power Connecting

AC24V + (RED)
AC24V - (BLACK)

Adaptor

HD-SDI Cable

(Option)

RS485 +   RS485 -

DVR

Monitor

PORT2		PORT1	
TX	RX	TX	RX
– +	– +	– +	– +
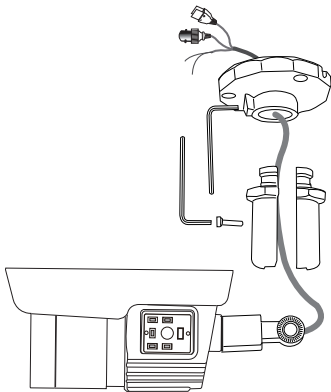
4. How to Set up the Function

Main Menu

```
             MENU
      MODEL        IR CDS
      EXPOSURE       ↵
      WHITE BAL      ↵
      IMAGE          ↵
      INTELLIGENCE   ↵
      SPECIAL FUNC   ↵
      DISPLAY        ↵
      EXIT
```

Functions can be set-up using the Menu Key of pelco protocol.
The menu consists of the "Main Menu" and "Sub Menu".
The main menu is displayed where 6 camera functions can be selected.
The sub menu is displayed at the push of each main menu selection.

MODEL

```
             MENU
      MODEL        IR CDS
      EXPOSURE       ↵
      WHITE BAL      ↵
      IMAGE          ↵
      INTELLIGENCE   ↵
      SPECIAL FUNC   ↵
      DISPLAY        ↵
      EXIT
```

select model : IR CDS
-> Switches day and Night using an external CDS Sensor

EXPOSURE

```
         MENU
MODEL          IR CDS
EXPOSURE       ↵
WHITE BAL      ↵
IMAGE          ↵
INTELLIGENCE   ↵
SPECIAL FUNC   ↵
DISPLAY        ↵
EXIT
```

```
         EXPOSURE
BRIGHTNESS   |mm|mm| 10
LENS          DC
SHUT SPEED    AUTO
FLICKERLESS   OFF
DSS           OFF
AGC           ON
WDR/BLC       ↵
DAY&NIGHT     ↵
SMART IR      OFF
RETURN
```

1. BRIGHTNESS : Adjust brightness level
   - 0(dark) ~ 20(bright) steps

2. LENS : Select LENS type(DC / MANUAL)

   MODE : In case of the indoor, will be recommended the INDOOR MODE
          In case of the outdoor, will be recommended the OUTDOOR MODE
   *If Shutter rolling occurs, the MODE should be changed from
   OUTDOOR to INDOOR

3. SHUTTER SPEED : Can be set to AUTO or MANUAL(PAL(NTSC))
   AUTO / 1/25(30),1/50(60),1/100(120),1/240,
   1/500,1/1000,1/2000,1/4000,1/8000, 1/16,000,
   1/30000, 1/60000 sec.

4. FLICKERLESS : Select ON or OFF

5. DSS : Select maximum DSS(Digital Slow Shutter)
   -OFF / x2, x3, x4

6. AGC : SELECT ON/OFF
   Select ON : Auto gain control(0~20 steps)

7. WDR/BLC : Select WDR(Wide Dynamic Range) or BLC(Back Light Compensation)
   - WDR
   WEIGHT :Represent the exposure of the shutter. The higher value,
   the brighter part looks well but the dark part relatively seems to
   darken (0 ~ 3)
   - BLC
   AREA : According to illumination of WINDOW, BLC controls.

POS-X : Adjust the window X-Axis position
POS-Y : Adjust the window Y-Axis position
SIZ-X : Adjust the window X-Axis size
SIZ-Y : Adjust the window Y-Axis size

* ACE and DEFOG should be off while WDR mode is on.

8. DY&NIGHT : Select Day&Night

  1) D&N
   -AUTO / DAY / NIGHT / EXT
    Delay : 0 ~ 255 seconds
    BURST : OFF / ON
    THRS : (LOW / MIDDLE / HIGH)
          According to daytime, nighttime setting the levels of transition
          sets to no changes when it is dark at, higher the step it is set to
    GAP : LOW / MIDDLE / HIGH
          This setting adjusts the margin of change from the setting
          of light to dark /daytime to nighttime and dark to light / nighttime
          to daytime. If this setting is too low then fluctuation may occur.

  2) IR CDS Model
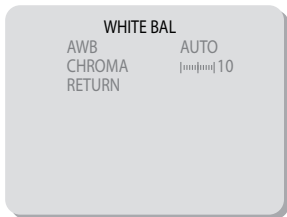   -AUTO / DAY / NIGHT
    Delay : ---
    BURST : OFF / ON
    THRS : ---
    GAP : ---

WHITE BALANCE

```
          MENU
MODEL          IR CDS
EXPOSURE       ↵
WHITE BAL      ↵
IMAGE          ↵
INTELLIGENCE   ↵
SPECIAL FUNC   ↵
DISPLAY        ↵
EXIT
```

```
          WHITE BAL
AWB            AUTO
CHROMA         |ᴜᴜ|ᴜᴜ| 10
RETURN
```

1. AWB : Select WHITE BALANCE mode
-AUTO / ONE PUSH / MANUAL / INDOOR / OUTDOOR
 AUTO : Automatically adjusts color according to the available lighting.
 ONE PUSH : It is a fixed white balance mode that may be automatically
             readjusted only by pressing ONE PUSH
 MANUAL : Color can be corrected when the user increases or decreases
          "Red Gain" or "Blue Gain".
             RED GAIN : Adjust R gain value 0 ~ 20
             BLUE GAIN : Adjust B gain value 0 ~ 20
 INDOOR : Set color temperature to be Indoor light (3700°K)
 OUTDOOR : Set color temperature to be Outdoor light (5100°K)

2. CHROMA : Adjust CHROMA gain value
-0 ~ 20 steps

IMAGE

```
        MENU
MODEL         IR CDS
EXPOSURE      ↵
WHITE BAL     ↵
IMAGE         ↵
INTELLIGENCE  ↵
SPECIAL FUNC  ↵
DISPLAY       ↵
EXIT
```

```
        IMAGE
SHARPNESS     6
MIRROR        OFF
FREEZE        OFF
E.ZOOM        X1
HLC           OFF
ACE           OFF
DNR           AUTO
D.COMPRESS    OFF
RETURN
```

1. SHARPNESS : Adjust sharpness level(0 ~ 10 steps)

2. MIRROR : Select a flip mode
   -OFF / H / V / H&V
   H : You can flip the picture horizontally on the screen
   V : You can flip the picture vertically on the screen
   H&V : You can flip the picture horizontally & vertically on the screen

3. Freeze : Select real or still mode(OFF / ON)

4. E.ZOOM : Select maximum digital zoom magnification.
   -x1 ~ x12, x14, x15, x18, x21, x25, x32

5. HLC : Select High Light Compensation
   When extremely bright light is projected to the camera masking is
   used on the portion to prevent partial saturation on the monitor.
   -OFF / ON
   ON   LEVEL : 0 ~ 20 steps
   COLOR : Black, White, Yellow, Cyan, Green, Magenta, Red, Blue

6. ACE : Select Digital WDR(Wide Dynamic Range)
   -OFF / ON
   *When ACE is ON, WDR and DEFOG function can not turn on

7. DNR : Select Digital Noise Reduction
   -AUTO / OFF / LOW / MIDDLE / HIGH

8. D.COMPRESS : Video image data compression function.
   Please use this function only IP camera.
   -OFF / ON

INTELLIGENT

```
            MENU                              INTELLIGENCE
    MODEL        IR CDS              PRIVACY       OFF
    EXPOSURE       ←                 MOTION        OFF
    WHITE BAL      ←                 RETURN
    IMAGE          ←
    INTELLIGENCE   ←
    SPECIAL FUNC   ←
    DISPLAY        ←
    EXIT
```

1. PRIVACY : Hide an area you want to hide on the screen
   -OFF / ON
   MASK# : Select mask area number (0 ~ 31)
   MODE : Mask enable or disable (OFF / ON)
   X-POS : Adjust the mask X-Axis position
   Y-POS : Adjust the mask Y-Axis position
   X-SIZ : Adjust the mask X-Axis size
   Y-SIZ : Adjust the mask Y-Axis size
   COLOR : Cyan, Green, Magenta, Red, Blue, Black, White, Yellow
   TRANS : Select mask transparency level (0 ~ 4)

2. MOTION : When there is movement of the subject on the screen,
   there will be an motion detection
   -OFF / ON

   SENSITIVITY : Adjust sensitivity of MD (0 ~ 20 steps)
                 More sensitive to setting to lower step with sensitivity
   AREA : Designate motion detection area (WHOLE / EACH)
   -AREA# : Setting 3 areas(0~2) of motion detection
   -MODE : Limit and define areas of motion detection
   -X-POS : Adjust the AREA X-Axis position
   -Y-POS : Adjust the AREA Y-Axis position
   -X-SIZ : Adjust the AREA X-Axis size
   -Y-SIZ : Adjust the AREA Y-Axis size
   -TRANS : Adjust color tone of designated area.

INTERVAL :Select the alarm interval time (0 ~ 255sec)
DWELL : Select the duration time about changing MD mode (0 ~ 255sec)
RETURN

SPECIAL FUNCTION

MENU	
MODEL	IR CDS
EXPOSURE	↵
WHITE BAL	↵
IMAGE	↵
INTELLIGENCE	↵
SPECIAL FUNC	↵
DISPLAY	↵
EXIT	

SPECIAL FUNC	
SHADING DET	OFF
SHADING	OFF
DEFECT DET	OFF
DEFOG	OFF
SYSTEM	PAL
HD FORMAT	1080P
PG	OFF
CVBS	ON
COMM	↵
DEFAULT	ON
RETURN	

1. SHADING DET : Sets the shading calibration that the lens will perform. Only occurs when the entire screen is viewed in white light.(OFF / ON)

2. SHADING : Select Lens shading compensation.(OFF / ON)

3. DEFECT DET : Compensates for bad pixels that my occur. Occurs when the whole screen is in full black or if there is bad pixelation and it changes the THRS values until the screen is fixed.(OFF / ON)

   *If you use a DC lens what closed IRIS, you do not need to block the lens while operating DEFECT function.In case of using a DC lens not closed and manual lens, you have to block the lens while operating DEFECT function.

4. DEFOG : Carry out defog function
   -OFF / ON
   LEVEL : Eliminate amount of fog on display screen.(0 ~ 10)
   * When DEFOG is ON, ACE and WDR function can not turn on.

5. SYSTEM : Select NTSC or PAL (NTSC / PAL)

6. HD FORMAT : Select Digital output to 1080P or 720P(1080P / 720P)

7. PG : Select Color pattern generator.(OFF / ON)

8. CVBS : Select Composite signal(OFF / ON)

9. COMM : Set up the camera ID, baud rate, protocol
  -ID : Select the camera ID(1 ~ 255)
  -BAUD RATE : Select serial communication speed
             2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200bps
  -PROTOCOL : Select operating protocol
             Pelco-D / Pelco-P / UPDATE
10. DEFAULT : All the settings will be restored to the factory default.

DISPLAY

```
         MENU
MODEL        IR CDS
EXPOSURE       ↵
WHITE BAL      ↵
IMAGE         ↵
INTELLIGENCE    ↵
SPECIAL FUNC    ↵
DISPLAY        ↵
EXIT
```

```
         DISPLAY

DISP SEL       ↵
SET TITLE      ↵
RETURN
```

1. DISP SEL : Select display item.
  -ID : OFF / ON
  -TITLE : OFF / ON
  -EZOOM : OFF / ON

2. SET TITLE : Select camera title menu (Text edit)

```
A B C D E F G H I J K L M N O P Q R S T
U V W X Y Z a b c d e f g h i j k l m n
o p q r s t u v w x y z , . ( ) { } [ ]
0 1 2 3 4 5 6 7 8 9 * + - / = ~ ! ? " '
S P      B S      C L R      P O S
RETURN
```

5. Specification

Image Sensor	1/3" Panasonic CMOS
Total Pixels	2010(H) x 1108(V) = 2,227,080 (pixel)
Active pixels	1944(H) x 1092(V) = 2,122,848 (pixel)
Scanning system	Progressive
Resolution	Digital ; 1920x1080p(1080p/30fps) , 1280x720p(720p/60fps)
	Analog : 700TVL
Min. illumination	Color : 1.0 lux , BW : 0.5lux
	Color DSS : 0.002 lux , BW DSS : 0.001 lux
Video Output	HD-SDI, BT.1120
	Analog : NTSC, PAL(without WDR)
S/N Ratio	more than 50dB (AGC off)
Exposure	
Brightness	0 ~ 20 steps
Lens	DC / Manual
Shutter Speed	Auto, 1/30(1/25) ~ 1/30000 sec
DSS	off / x2 / x3 / x4
AGC	Off / On
WDR/BLC	Off / WDR / BLC
Day&Night	Auto / Day / Night / Ext
White Balance	Auto / ONE PUSH / Manual / Indoor / Outdoor
Image	
Shappness	0~10 steps
Mirror	Off / H / V / H&V
Freeze	Off / On
E.Zoom	x1 ~ x32
HLC	Off / On
ACE	Off / On
DNR	Off / Low / Middle / High / Auto
D.Compress	Off / On

Intelligence		
Privacy	Off / On (32 points)	
Motion Detection	Off / On (4 points)	
Special Function		
Shading Det	Off / On	
Shading	Off / On	
Defect Det	Off / On	
Defog	Off / On	
System	NTSC / PAL	
HD Format	1080P / 720P	
PG	Off / On	
CVBS	Off / On	
COMM	ID (1 ~ 255)	
	Baudrate : 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200	
	Protocol : Pelco-P / Pelco-D / Update	
Default	On / Done	
Display		
Disp Sel (Off / On)	ID / Title / Zoom Ratio	
Set Title	Text Edit	
Language	English	
O.S.D Text	0~9, A~Z, a~z	
IR	68EA	40EA
Night View Distance	Outdoor 50m	Outdoor 40m
Lens	ICR 2.8~10mm Mega Pixel Varifocal Lens	
Cable	5C-2V 120m(Max)	
Power Source	DC12V±10% , AC24V±10%	
Power Consumption	DC12V 800mA / AC 24V 300mA	DC12V 600mA / AC 24V 260mA
Operating Temperature	-10 ~ +50 (Humidity : 0%RH ~ 80%RH)	
Storage Temperature	-20 ~ +60 (Humidity : 0%RH ~ 90%RH)	
Dimension	94(Ø) x 161mm	74.5(Ø) x 162mm

Design and specifications are subject to change without notice.