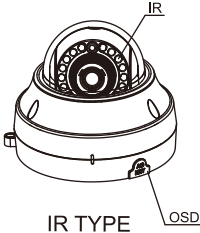# HD Camera Series

Before attempting to connect or operate this product,
Please read these instructions carefully and save this manual for future use.
The design and specifications are subject to be changed without notice.

P/N : 388059A25

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 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.

Regulatory Notice
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions :
(1)This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
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 in a residential installation.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and use in accordance with the instructions, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause 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:
• Power Supply : This camera must always be operated a DC 12V, AC 24V
• Handling of the unit : Be careful not to spill water or other liquids on the unit.
• Operating and storage location : Avoid viewing a very bright object (such as light fittings) during an extended period.
  Avoid operating or storing the unit in the following locations.
  - Extremely hot or cold places (operating temperature -10 °C ~ 50 °C, however, we recommend that the unit be used within a temperature range of 0 °C ~ 45 °C)
  - Damp or dust place , places exposed to rain and places subject to strong vibration
• Close to generators of powerful electromagnetic radiation such as radio or TV transmitters.
• Handing of the Unit
  - Remove dust or dirt on the surface of the CMOS sensor with a blower.
  - Avoid the use of volatile solvents such as thinners, alcohol, benzene and insecticides.
    They may damage the surface finish and/or impair the operation of the camera.

Feature
• 1/3" Panasonic CMOS Sensor
• Full HD Resolution
  1920x1080p / 30fps(25fps), 1280x720p / 30fps(25fps), 1280x720p / 60fps(50fps)
• Motorized : Pan(0°~350°), Tilt(20°~90°)
• 14pcs IR LED
• 3MP 3.6mm Fixed Lens
• DAY & NIGHT
• Real-time True WDR(Wide Dynamic Range)
• DNR(Digital Noise Reduction: 2D + 3D)
• Defog Function
• Dome size : 75Ø
• IP66 / IK10 for outdoor application
• Power : DC12 / AC 24(50Hz ~ 60 Hz)

- Dome Camera
Part Names

IR TYPE

14 IR LED Board

Address / communication setting

SW1-1

Baudrate setting

S/W NO	2400	4800	9600	19200	38400	57600
1	OFF	OFF	OFF	OFF	ON	ON
2	OFF	OFF	ON	ON	OFF	OFF
3	OFF	ON	OFF	ON	OFF	ON

PROTOCOL setting

S/W NO	PELCO D	EZP
4	OFF	ON

Program input setting

S/W NO	DOWNLODE MODE	NOMAL MODE
7	ON	OFF

LOOP setting

S/W NO	LOOP ON	LOOP OFF
8	ON	OFF

Ex
00000001 - 1
00000010 - 2
00000011 - 3
00000100 - 4
10000000 - 128
11111111 - 255

SW2-1

ADDRESS(ID)setting

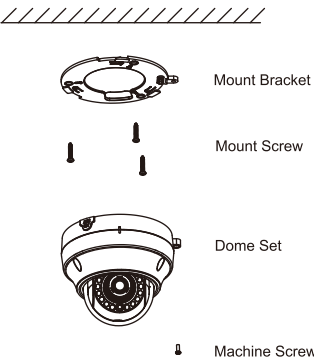| S/W NO	1	2	3	4	5	6	7	8
ADDRESS (NO)	128	64	32	16	8	4	2	1

* ID setting by binary notation

Installation
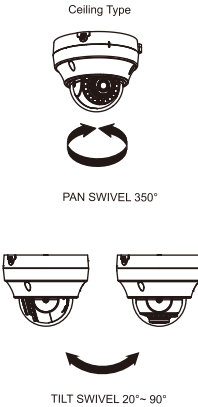
Mount Bracket

Mount Screw

Dome Set

Machine Screw

• Fix the base housing with the supplied 3pcs of screws on the ceiling or wall.
• Adjust the camera direction by turning the gimbal bracket.
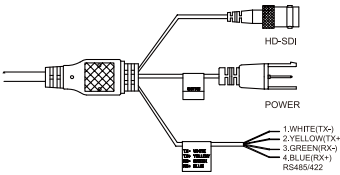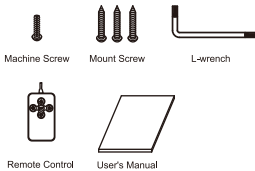• Firmly fix the decoration ring into the base.

Set Camera DIRECTION

Ceiling Type

PAN SWIVEL 350°

TILT SWIVEL 20°~ 90°

Cable Connection

HD-SDI

POWER

1.WHITE(TX-)
2.YELLOW(TX+)
3.GREEN(RX-)
4.BLUE(RX+)
RS485/422

Accessories And Others

Machine Screw   Mount Screw   L-wrench

Remote Control   User's Manual

Dimensions(mm)

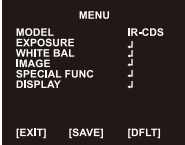Ø75.0
100.0
60.6
Ø120.0

Specification

Specifications are subject to be changed without notice.

Image Sensor	1/3" Panasonic CMOS Sensor
Total Pixels	1956(H) x 1266(V) = 2.48M pixels
Active pixels	1944(H) x 1092(V) = 2.12M pixels
Scanning system	Progressive Sacn
Resolution	Digital : 1080p/30(25)fps, 720p/60(50)fps, 720p/30(25)fps
	Analog : 700TVL
Min. illumination	Color : 0.5 lux , BW : 0.1lux, Color DSS : 0.002 lux , BW DSS : 0.001 lux
Video Output	HD : HD-SDI, EX-SDI, Analog SD : VBS(without WDR)
Model	D&N / IR-CDS
Brigntness	0 ~ 20 steps
Shutter speed	Auto / Manual (1/30(1/25) ~ 1/30000)
DSS	Off / x2 / x4(x8 : 60 or 50 fps mode only)
AGC	Off / On
Flickerless	Off / On
WDR/BLC	Off / WDR / BLC
DAY&NIGHT	Auto / Day / Night
WHITE BAL	Auto / One Push / Manual / Indoor / Outdoor
HLC	Off / On / Night only
DNR	Off / Low / Middle / High / Auto
Mirror	Off / H / V / H&V
Sharpness	0 ~ 10 steps

ACE	Off / Low / Middle / High
Defog	Off / On (Auto / Manual)
Freeze	Off / On
Gamma	0.45 / 0.55 / 0.65 / 0.75
E.Zoom	x2 ~ x32
Defect DET	Off / On
Image Range	Full / Comp. / User
System	NTSC / PAL
HD Format	1080p/30(25)fps / 720p/30(25)fps / 720p/60(50)fps
EX-SDI	Off / On
Comm	ID : 1 ~ 255
	Baud Rate : 2400 / 4800 / 9600 / 19200 / 38400 / 57600
	Protocol : Pelco-D, EZP
Power Source	DC12 / AC 24(50Hz ~ 60 Hz)
Power Consumption	AC 24 V : 200 mA / IR ON : 300 mA , DC 12 V : 250 mA / IR ON : 350 mA
Power Input	Connector
Video Output(HD-SDI)	MMCX Connector
Operating Temperature	-10℃ ~ +50℃ (Humidity : 0%RH ~ 90%RH)
Storage Temperature	-20℃ ~ +60℃ (Humidity : 0%RH ~ 90%RH)

Camera menu is subject to be changed without prior notice to upgrade and quality increase and we may use slip sheet for the change.
Please check the camera version and the slip sheet if the camera menu and this manual menu is not matched.

1 MAIN MENU

```
MENU
MODEL          IR-CDS
EXPOSURE       ↲
WHITE BAL      ↲
IMAGE          ↲
SPECIAL FUNC   ↲
DISPLAY        ↲

[EXIT]   [SAVE]   [DFLT]
```
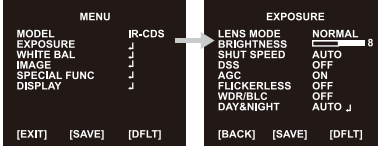
Functions can be setup using "Menu Key Command" of Visca protocol.
The menu consists of the "Main Menu" and "Sub Menu".
The main menu is displayed where 6 camera functions can be selected.
To the push of each main menu selection, the sub-menu is displayed

If you want save the menu, select [SAVE].
If you want not save the menu, select [EXIT] (After select , Power off -> on)
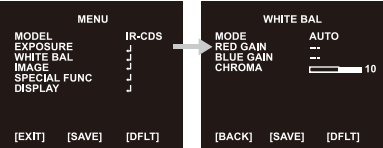If you want default the menu, select [DFLT]

◆ MODEL
◈ MODEL : Select model
　　　　► D&N / IR-CDS(Default)

2 EXPOSURE

```
MENU                     EXPOSURE
MODEL        IR-CDS      LENS MODE      NORMAL
EXPOSURE     ↲           BRIGHTNESS              8
WHITE BAL    ↲           SHUT SPEED     AUTO
IMAGE        ↲           DSS            OFF
SPECIAL FUNC ↲           AGC            ON
DISPLAY      ↲           FLICKERLESS    OFF
                         WDR/BLC        OFF
                         DAY&NIGHT      AUTO ↲

[EXIT]  [SAVE]  [DFLT]   [BACK]   [SAVE]   [DFLT]
```

◈ LENS MODE : Select Lens mode
　► NORMAL / DEBLUR
◈ BRIGHTNESS : Adjust brightness level
　► 0(dark) ~ 20(bright) steps
◈ SHUT SPEED : Can be set in AUTO or MANUAL
　► AUTO / MANUAL↲
　　▷ Manual Shutter Speed
　　* 30 / 25 fps mode : x4, x2, 1/30(25), 1/60(50), 1/120(100), 1/250, 1/700, 1/1000, 1/1600,
　　　1/2500, 1/5000, 1/7000, 1/10000, 1/30000 sec
◈ DSS : Select maximum DSS(Digital Slow Shutter)
　* 30 / 25 fps mode
　► OFF /　x2, x4
◈ AGC : Select Auto Gain Control
　► OFF / ON
◈ FLICKERLESS : Select Flickerless mode
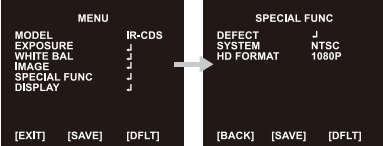　► OFF / ON (remove screen flicker)

3 EXPOSURE

◈ WDR/BLC : Select WDR(Wide Dynamic Range) or BLC(Back Light compensation)
　► WDR.↲
　　▷ LEVEL : Adjust WDR level. ► LOW, MID-LOW, MIDDLE, MID-HIGH, HIGH
　　※ WDR doesn't work in Shutter Manual Mode.　※ When WDR on, CVBS output is disabled.
　► BLC.↲
　　▷ POSITION : Adjust the window position　▷ SIZE : Adjust the window size
　　※ Can't use WDR and BLC at the same time.
　　　(When WDR On, BLC is Off. And when BLC is On, WDR is Off)
◈ DAY&NIGHT : Select Day&Night(Model : IR-CDS)
　► MODE : AUTO.↲(Default) / DAY / NIGHT.↲
　　▷ DELAY : 0 ~ 255 sec / Default : 5sec
　　▷ THRS : 0 ~ 7 / Default : 0
　　　Day↔Night switching level in Auto Mode. Switching in lower lux with higher threshold level.
　　▷ GAP : LOW, MIDDLE, HIGH / Default : LOW
　　　Margin between Day→Night switching level and Night→Day switching level.
　　▷ ANTI-SAT : LED saturation improves. (0~20, Default : 5)
　　▷ BURST : OFF / ON
　　▷ POLARITY : External Input polarity (ACTIVE LOW / ACTIVE HIGH)
◈ DAY&NIGHT : Select Day&Night(Model : Day&Night)
　► MODE : AUTO.↲(Default) / EXT-IN.↲ / DAY / NIGHT.↲
　　▷ DELAY : 0 ~ 255 sec / Default : 5sec
　　▷ THRS : 0 ~ 28 / Default : 20
　　　Day↔Night switching level in Auto Mode. Switching in lower lux with higher threshold level.
　　▷ GAP : LOW, MID-LOW, MIDDLE, MID-HIGH, HIGH / Default : LOW
　　　Margin between Day→Night switching level and Night→Day switching level.
　　▷ IR DETECTION : Setting IR-Detection mode. (ON / OFF)
　　▷ IR DET LEVEL : Setting IR-Detection level. (LOW, MID-LOW, MIDDLE, MID-HIGH, HIGH / Default : MID-HIGH)
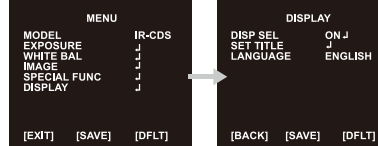　　▷ ANTI-SAT : LED saturation improves. (0~20, Default : 5)
　　▷ BURST : OFF / ON

4 WHITE BALANCE

```
MENU                     WHITE BAL
MODEL        IR-CDS      MODE         AUTO
EXPOSURE     ↲           RED GAIN     ---
WHITE BAL    ↲           BLUE GAIN    ---
IMAGE        ↲           CHROMA              10
SPECIAL FUNC ↲
DISPLAY      ↲

[EXIT]  [SAVE]  [DFLT]   [BACK]   [SAVE]   [DFLT]
```

◈ 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".
　▷ INDOOR : Set color temperature to be Indoor light (3700°K)
　▷ OUTDOOR : Set color temperature to be Outdoor light (5100°K)
◈ RED GAIN : Adjust R gain value
　► 0 ~ 20 steps
◈ BLUE GAIN : Adjust B gain value
　► 0 ~ 20 steps
◈ CHROMA : Adjust CHROMA gain value
　► 0 ~ 20 steps

5 IMAGE

```
MENU                     IMAGE
MODEL        IR-CDS      HLC          ↲
EXPOSURE     ↲           DNR          AUTO
WHITE BAL    ↲           MIRROR       OFF
IMAGE        ↲           SHARPNESS           5
SPECIAL FUNC ↲           ACE          OFF
DISPLAY      ↲           DEFOG        OFF
                         FREEZE       OFF
                         GAMMA        0.55
                         E.ZOOM       OFF

[EXIT]  [SAVE]  [DFLT]   [BACK]   [SAVE]   [DFLT]
```

◈ 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.
　　▷ MODE : OFF / ON / NIGHT
　　▷ LEVEL : 0 ~ 20 steps
　　▷ COLOR : 0 ~ 13 steps
◈ DNR : Select Digital Noise Reduction
　► OFF / LOW / MIDDLE / HIGH / AUTO
◈ 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
◈ SHARPNESS : Adjust sharpness level
　► 0 ~ 10 steps
◈ ACE : Select Digital WDR (Wide Dynamic Range)
　► OFF / LOW / MIDDLE / HIGH

6 IMAGE

◈ DEFOG : Carry out defog function
　► OFF / ON.↲
　　▷ MODE : AUTO / MANUAL
　　▷ LEVEL : LOW / MIDDLE / HIGH
※ Can't use DEFOG and ACE at the same time
　(When ACE On, DEFOG is Off. And when DEFOG is On, ACE is Off)
◈ Freeze : Select real or still mode
　► OFF / ON
◈ GAMMA : Select GAMMA
　► 0.45 / 0.55 / 0.65 / 0.75
◈ E.ZOOM
　► OFF / ON.↲
　　▷ LIMIT : Max x2 ~ x19, x21, x23, x25, x28, x32
　　▷ POSITION : Select maximum digital zoom magnification.

7 SPECIAL FUNC

```
MENU                     SPECIAL FUNC
MODEL        IR-CDS      DEFECT
EXPOSURE     ↲           SYSTEM       NTSC
WHITE BAL    ↲           HD FORMAT    1080P
IMAGE        ↲
SPECIAL FUNC ↲
DISPLAY      ↲

[EXIT]  [SAVE]  [DFLT]   [BACK]   [SAVE]   [DFLT]
```

◈ DEFECT : Compensates for bad pixels that may 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.
※ When you use this function, you have to block the lens for blocking lights into the lens.
◈ IMAGE RANGE : Select image bit range. (Full : 100%, Compressed : 75%)
　► FULL, COMP, USER.↲
　　▷ LEVEL : Select user mode level (0 ~ 32)
◈ SYSTEM : Select NTSC(30/60fps) or PAL(25/50fps).
◈ HD FORMAT : Select Digital output (1080p/30(25)fps, 720p/30(25)fps, 720p/60(50)fps)
◈ EX-SDI : Select EX-SDI mode (OFF / ON)

8 DISPLAY

```
MENU                     DISPLAY
MODEL        IR-CDS      DISP SEL     ON ↲
EXPOSURE     ↲           SET TITLE    ↲
WHITE BAL    ↲           LANGUAGE     ENGLISH
IMAGE        ↲
SPECIAL FUNC ↲
DISPLAY      ↲

[EXIT]  [SAVE]  [DFLT]   [BACK]   [SAVE]   [DFLT]
```

◈ DISP SEL : Select display item.
　► OFF / ON.↲
　　▷ ID : OFF / ON
　　▷ ZOOM RATIO : OFF / ON
◈ SET TITLE : Select camera title menu (Text edit– max 40 characters)
◈ LANGUAGE : Select language.
　► English / Simplified Chinese / Traditional Chinese / Japanese

※ Character Table of Text edit Mode
```
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 * + - / = ~ ! ? " '
```