LILIN®

WIDE DYNAMIC RANGE DAY&NIGHT CAMERA

PIH-8176/8178

INSTRUCTION MANUAL

IMPORTANT SAFEGUARDS

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.

GRAPHIC SYMBOL EXPLANATION

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 unit.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED
BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING
TO THE INSTRUCTIONS

CAUTION

⊗ **Do not drop or strike this equipment.**
Sensitive electronics inside are vulnerable to excessive shock.

⊗ **Do not install the equipment near any naked flames or heat sources.**
Excessive heat could damage this unit.

⊗ **Do not expose this unit to rain or excessive moisture, avoid smoke and dust.**
Please the camera in an environmental housing for protection. If the camera gets wet, unplug it and have it checked by qualified service personnel.

⊗ **Do not cover cloth or to install this unit in poorly ventilated places.**
This may lead to overheating.

⊗ **Do not continue to operate if there appears to be fault.**
If the unit ceases to function, contact qualified service personnel for help.

⊗ **Do not touch the power connection with wet hands.**
Risk of short circuit or electric shock.

⊗ **Do not damage the power cord or leave it under pressure.**
Risk of fire or shock circuit.

CONGRATULATIONS

Thank you for purchasing this WDR Day/Night Camera. You now own one of the many fine CCTV products we manufactured. This product has been carefully inspected under rigid quality control and should reach you in perfect condition. With reasonable care, it will provide years of reliable performance.

We recommend that you read this installation and operation manual thoroughly before installing and operation your new system.

Here you will find all the information you need to set up and use the system. If any questions are not answered in the manual, please contact your dealer.
Before proceeding, please read and observe all instructions and warnings contained in this manual. Retain this manual with the original bill of sale for future reference and, if necessary, warranty service.

When unpacking your new camera, check for missing or damaged items. If any item is missing, or if damage is evident, **DO NOT INSTALL OR OPERATE THIS PRODUCT**. Contact your dealer for assistance.

WARRANTY INFORMATION

Please complete the following product purchase information. The factory will requests this information when contacted for technical support, or warranty repair. It is also valuable in case of loss or theft.

Purchase Date : _____

Serial Number : _____

Model Number : _____

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FEATURES

The PIH-8176/8178 series Wide Dynamic Range Day&Night Camera introduces supremacy in video quality. This compact yet full functional color DSP camera use SONY high sensitive 1/3" Vertical Double-Density interline transfer CCD. It delivers high resolution superior color images in day condition, and clear sharp monochrome pictures in night condition. The evolution 2-in-1 intelligent video camera brings your security surveillance system to a new digital era.

- **WIDE DYNAMIC RANGE (WDR)**
  SS-II DSP chip built-in SONY allows the camera to find the best picture conditions in any environment and automatically gives a necessary light level compensation, so you can always obtain the clear picture. The finest detail and perfect light contrast.

- **PRIVACY ZONE**
  Privacy Zones prevent objects and areas such as windows and doors which are within the camera's viewing range but not in the scope of surveillance, 8 masking areas per screen simultaneously.

- **ON SCREEN DISPLAY CONTROL (OSD)**
  This camera provides an on-screen display (OSD) setup menu where all advanced functions can be selected and setup via OSD Setup Menu.

- **DAY & NIGHT (ICR removable)**
  The camera provides automatic mode changeover from color to B/W or B/W to color by sensing different light conditions.
  It remains at true color mode in the day condition for optimal color and switched to B/W mode in night condition for clear viewing by removing the Infrared Cut Filter.

- **LOW-SPEED SHUTTER CONTROL**
  The low-speed shutter control offers the optimal brightness and less noise images in conditions of low-brightness.

- **DAY & NIGHT EXTERNAL CONTROL TRIGGER**
  It is the function that can be switched to DAY mode or NIGHT mode by receiving DAY/NIGHT ON/OFF signal from external infrared illuminator.

- **BACK LIGHT COMPENSATION**
  Lights from the behind of the objects can be enhanced automatically to compensate for poorly illuminated scenes through DSP control such as iris and shutter speeds. This camera provides 2 Back Light Compensation control mode.

- **WHITE BALANCE**
  Color-temperature is adjusted automatically to produce clean, natural and rich color images. ATW, PUSH, MWB, INDOOR and OUTDOOR modes are available to obtain most suitable selection.

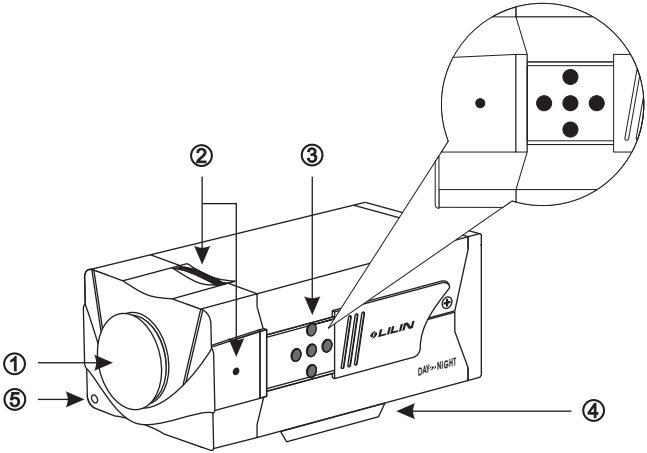
- **LINE-LOCK / INTERNAL**
  With AC type camera, the Line Lock facility enables color-rolling free video images.
  The Internal Sync. Function utilized a crystal to generate the camera frequency. (DC camera comes only with Internal Sync. and AC cameras has Line Lock.)

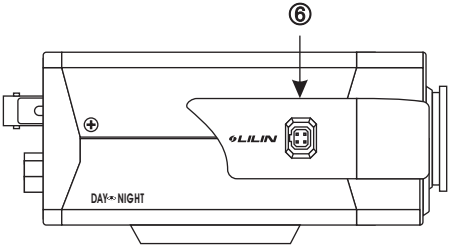
- **ACCEPTS VIDEO OR DC DRIVE AUTO IRIS LENS**
  Both types of Auto Iris lens can be used; video and direct (DC) drive.

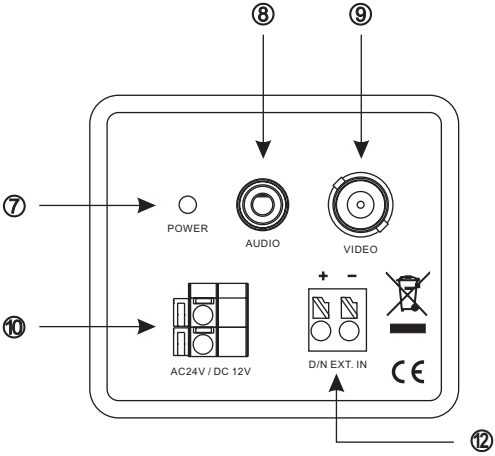
- **AUDIO OUTPUT**
  Built-highly sensitive capacitive microphone allows setting up of audio monitoring system.

- **FOCAL LENGTH ADJUSTMENT RING**
  Use attached metal ring to adjust the back-focus distances or picture focus.

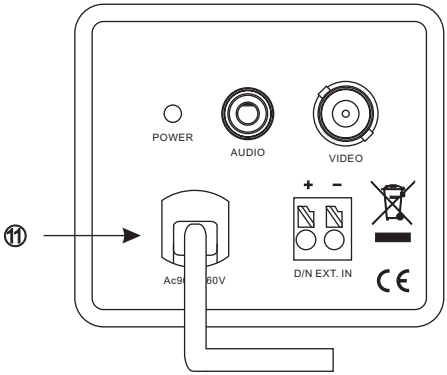
PART DESCRIPTION







PIH-8176



PIH-8178

❶ LENS MOUNT CAP

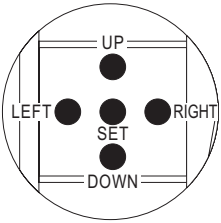
Prevent Damages to the image sensor and to keep dust away.

❷ FOCAL LENGTH ADJUSTMENT RING AND LOCKING SCREW

Use this ring to adjusts the back-focal distance or picture focus. Rotate this ring clockwise or counterclockwise for a CS-mount lens.
Use the locking screw to lock the focal length.

❸ USER OSD SETTING

Setting switches and Functions.



1. UP : Press to move the cursor upward or to select items.
2. LEFT : Press to move the cursor to the left and to select or adjust the parameters of the selected item.
3. RIGHT : Press to move the cursor to the right and to select or adjust the parameters of the selection item.
4. DOWN : Press to move the cursor downwards or to select items.
5. SET : Press to display the SETUP MENU, if the selected item has SUB-MENU, press again to enter SUB-MENU.

❹ CAMERA MOUNTING BRACKET

The mounting bracket mounted underneath the main body can be mounted to either the top or bottom of the camera using the attached screws(M2.6x5.0).

❺ MICROPHONE

Highly sensitive microphone built-in.

❻ AUTO IRIS CONNECTOR (4PIN SOCKET)

Supplies power and control signals to an auto iris lens(jack not supplied).

❼ POWER LED

Power ON/OFF indicator.

❽ AUDIO OUTPUT RCA CONNECTOR

Audio signal output.

❾ VIDEO OUTPUT CONNECTOR

Composite video signal output.

❿ AC24V/DC12V COMPATIBLE INPUT TERMINAL

AC24V(AC24V 10%) or DC12V(DC12V 10%, Non-Polarity) power input.

⓫ AC INPUT

AC90~260V maximum power input.

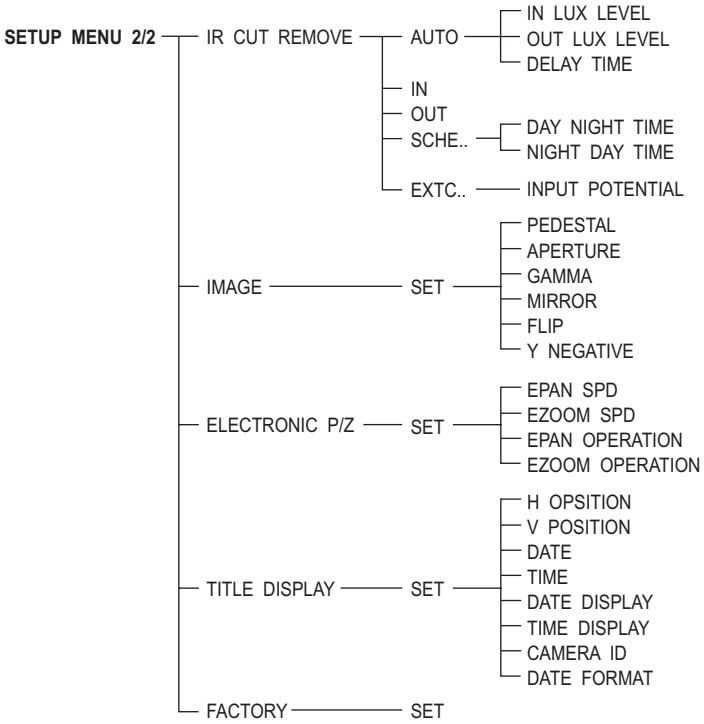
⓬ DAY & NIGHT EXTERNAL CONTROL TRIGGER (TTL type)

The camera will be triggered to switch between Day(color) or Night(B/W) mode by external TTL device [LOW(0V) / HIGH(+3V ~ +5V)]. To define Low or High potential to trigger IR-Cut Filter move out to product B/W video image is selected from EXTCTRL menu.

CONFIGURATION OF THE MENU

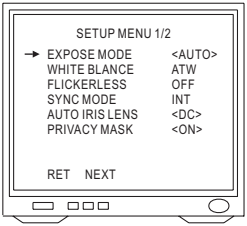
SETUP MENU 1/2

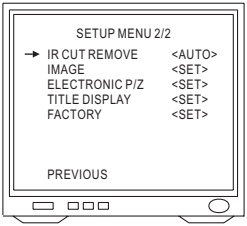
- EXPOSE MODE
  - AUTO
    - SHUT SPD MIN
    - SHUT SPD MAX
    - LOW Lux MODE
      - AGC
      - AGCSLOW
      - OFF
      - SLOW
    - BACK LIGHT
      - OFF
      - FIX WGT.
      - AUTO WGT.
  - MANUAL
    - SHUTTER SPD
    - LOW Lux MODE
      - AGC
      - AGCSLOW
      - OFF
      - SLOW
    - BACK LIGHT
      - OFF
      - FIX WGT.
      - AUTO WGT.
  - WDR
    - LOW Lux MODE
      - AGC
      - AGCSLOW
      - OFF
      - SLOW
- WHITE BALANCE
  - ATW
  - PUSH
  - MWB
  - OUTDOOR
  - INDOOR
- FLICKERLESS
  - OFF
  - ON
- SYNC MODE
  - INT
  - LL
    - LL PHASE
- AUTO IRIS LENS
  - DC
    - IRIS LEVEL
  - VIDEO
- PRIVACY MASK
  - ON
    - ZONE NUMBER
    - EDIT POSITION
    - CLEAR ZONE
  - OFF


SETUP MENU 2/2
IR CUT REMOVE
AUTO
IN LUX LEVEL
OUT LUX LEVEL
DELAY TIME
IN
OUT
SCHE..
DAY NIGHT TIME
NIGHT DAY TIME
EXTC..
INPUT POTENTIAL
IMAGE
SET
PEDESTAL
APERTURE
GAMMA
MIRROR
FLIP
Y NEGATIVE
ELECTRONIC P/Z
SET
EPAN SPD
EZOOM SPD
EPAN OPERATION
EZOOM OPERATION
TITLE DISPLAY
SET
H OPSITION
V POSITION
DATE
TIME
DATE DISPLAY
TIME DISPLAY
CAMERA ID
DATE FORMAT
FACTORY
SET

SETTING MENU AND FUNCTIONS

1. Press [SET] key to enter SETUP MENU.
2. Press [UP/DOWN] key to select desired item.
3. Press [LEFT/RIGHT] key to select or adjust the parameters.
4. Press [SET] key to enter the SUB-MENU of selected item.
5. Position the cursor beside [RET] and press [SET] key to exit SETUP MENU.
6. Position the cursor beside [NEXT] and press [SET] key to enter SETUP MENU 2/2.
7. Position the cursor beside [PREVIOUS] and press [SET] key and return to SETUP MENU 1/2.





RET : Exit Menu
NEXT : Next Page
PREVIOUS : Previous Page

EXPOSE MODE

☞ Position the cursor beside EXPOSE MODE and select desired item by using [LEFT/RIGHT] key.
EXPOSE MODE changes as follows:

→ AUTO → MANUAL → WDR

EXPOSE MODE has 3 Exposure modes for selection. Each Exposure mode process electronic shutter differently and is suitable for different environment.

AUTO (Auto Expose)

Switches automatically between electronic shutter speed and the low-brightness zone control selected in LOW Lux MODE to control the exposure time.

MANUAL (Manual Expose)

Electronic shutter speed is set up manually. The set value is fixed and it does not depend on luminance.

WDR (Wide Dynamic Range Control)

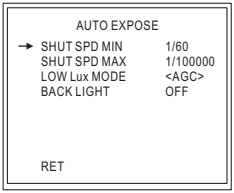
Use WD control, electronic shutter control, mechanical iris control, and the low-brightness zone controls selected in LOW Lux MODE to control the exposure time automatically. Seamless switching between control zones delivers shockless AE.

- Requires a separate mechanical lens.

● AUTO

① Shutter Speed Setting

1. Position the cursor beside EXPOSE MODE and select AUTO by using [LEFT/RIGHT] key.
2. Press [SET] key to display the AUTO EXPOSE menu.
3. Select SHUT SPD MIN by using [LEFT/RIGHT] key.
   Shutter Speed Minimum Mode changes as follows:
   → 1/60(1/50) → 1/100(1/120) → 1/200 Sec.
4. Select SHUT SPD MAX by using [LEFT/RIGHT] key.
   Shutter Speed Maximum Mode changes as follows:
   → 1/500 → 1/1000 → 1/2000 → 1/5000 → 1/10000
   1/100000 ← 1/50000 ← 1/20000 Sec. ←
5. Position the cursor beside RET and press [SET] key and return to SETUP MENU 1/2.



② Low Lux Mode Setting

The purpose of Low Lux Mode parameters is to improve low-brightness zones that make control of the electronic shutter and mechanical iris difficult.
Thus, under minimum shutter speed (UMS) can improve the situation.

```
AUTO EXPOSE
  SHUT SPD MIN      1/60
  SHUT SPD MAX      1/500
→ LOW Lux MODE      <AGC>
  BACK LIGHT        OFF

  RET
```

☛ Position the cursor beside LOW Lux MODE and select desired item.
Low Lux Mode changes as follows:

→ AGC → AGCSLOW → OFF → SLOW

NOTE

If IR CUT REMOVE set as "AUTO", details of Low Lux Mode setting please refer to AUTO NOTES of IR CUT REMOVE.

1. AGC (Automatic Gain Control)

AGC control is activated when UMS zones reached. The maximum gain can also be switched among 3 gain levels in AGC gain setting.

A. Press [SET] key to display the AGC SETUP MENU.

B. Select AGC MAX (Gain level) by using [LEFT/RIGHT] key.
Gain Level changes as follows:

→ LOW → MID → HIGH

```
AGC SETUP
→ AGC MAX          MID

  RET
```

LOW : Select lower gain control.
MID : Select normal gain control.
HIGH : Select Higher gain control.

2. AGCSLOW & SLOW

A. AGCSLOW

Activates both low-speed shutter control and AGC control.
When UMS zones are set, low-speed shutter control is activated first, then switched to AGC control after the maximum number of stored fields reached.

B. SLOW

Low-speed shutter control is activated when UMS zones are reached. As for the accumulated time when slow control is initiated, the staring shutter speed is as set in SHUT SPD MIN in the electronic shutter control mode (EXPOSE MODE=AUTO, WDR) or as selected in SHUTTER SPD when electronic shutter control is manual (EXPOSE MODE=MANUAL). For fixed-shutter flickerless operation, the starting point is NTSC=1/100 or PAL=120.

NOTE

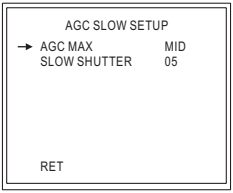
The low-speed shutter control offers the optimal brightness level by increasing the number of stored fields of the CCD in response to brightness level. Compared to AGC control, Low-Speed shutter offer less noise even in conditions of low-brightness, but longer stored fields will lead to diminished dynamic resolution.

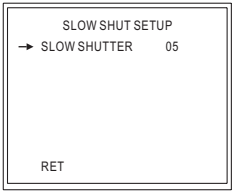
C. Press [SET] key to display the AGC SLOW SETUP or SLOW SHUT SETUP menu.

D. Select SLOW SHUTTER by using [LEFT/RIGHT] key.

Slow Shutter Mode changes as follows:

→ 02 → 03 → 05 ..... 20 → 40 → 80 → 160 → 320 → 510 FLD



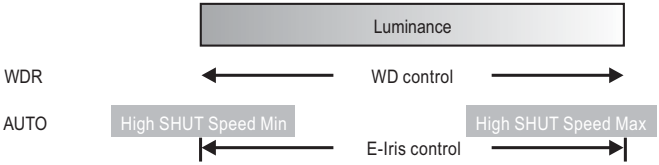


3. OFF

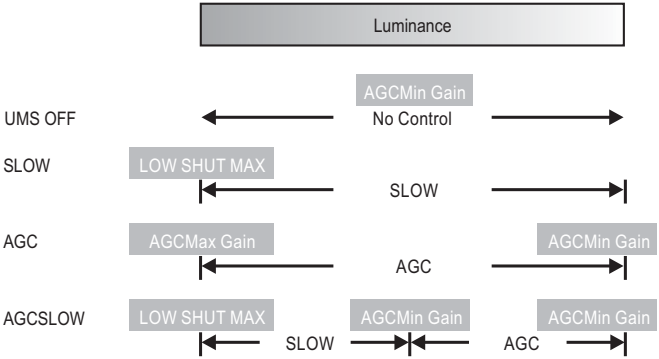
Disable control in UMS zone.

Control Range

EXPOSE MODE	Luminance	
WDR	UMS mode Control Range	WD Control
AUTO	UMS mode Control Range	E-Iris Control



Control parameters and EXPOSE control range



Control parameters and UMS control range domain

③ Back Light Compensation Setting

☛ Position the cursor beside BACK LIGHT and select desired item.
Back Light Compensation Mode changes as follows:

→ OFF → FIX WGT. → AUTO WGT. →

AUTO EXPOSE	
SHUT SPD MIN	1/60
SHUT SPD MAX	1/100000
LOW Lux MODE	<AGC>
→ BACK LIGHT	OFF
RET	

NOTES

1. FIX WGT. (Fixed weighting mode)
   Wighting values is fixed for each detection window, and backlight compensation is performed according to these values.
2. AUTO WGT. (Automatic weighting mode)
   The weighting values are automatically controlled for backlight compensation in response to the light intensity detection window.

BLC function is automatic weighting mode

● MANUAL

① Shutter Speed Setting

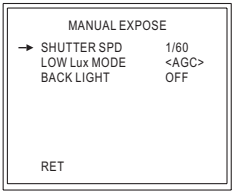
1. Position the cursor beside EXPOSE MODE and select MANUAL by using [LEFT/RIGHT] key.
2. Press [SET] key to display the MANUAL EXPOSE menu.
3. Select SHUT SPD by using [LEFT/RIGHT] key.
   A. Shutter Speed Mode changes as follows
   (Low Lux Mode=AGC or OFF):

→ 1/60(1/50) → 1/100(1/120) → 1/250 → 1/500 → 1/1000 Sec. →
1/50000 ← 1/20000 ← 1/10000 ← 1/4000 ← 1/2000 Sec. ←

B. Shutter Speed Mode changes as follows (Low Lux Mode=AGCSLOW or SLOW):

→ 1/60(1/50) → 1/100(1/120) → 1/250 → 1/500 Sec. → 1/1000 → 1/2000 →

4. Position the cursor beside RET and press [SET] key and return to SETUP MENU 1/2.



NOTES

1. If EXPOSE MODE set as "MANUAL" and Low Lux Mode set as "AGCSLOW" or "SLOW" with Shutter Speed setting over 1/2,000 Sec., Then high potentiality to cause Hunting phenomenon. So maximum Shutter Speed is limited to 1/2,000 Sec..
2. To avoid Hunting phenomenon, please lower the Shutter Speed.
3. If IR CUT REMOVE set as "AUTO", details of Shutter Speed setting please refer to AUTO NOTES of IR CUT REMOVE.
4. When auto iris lens used, 1/60(1/50)Sec. speed mode is recommended.

② Low Lux Mode Setting

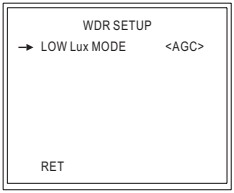
Please refer to Low Lux Mode Setting of AUTO.

③ Back Light Compensation Setting

Please refer to Back Light Compensation Setting of AUTO.

● WDR

1. Position the cursor beside EXPOSE MODE and select WDR by using [LEFT/RIGHT] key.
2. Press [SET] key to display the WDR menu.
3. Select LOW Lux MODE by using [LEFT/RIGHT] key.
4. Position the cursor beside [RET] and press [SET] key and return to SETUP MENU 1/2.



① Low Lux Mode Setting

Please refer to Low Lux Mode Setting of AUTO.

WHITE BALANCE

☛ Position the cursor beside WHITE BALANCE and select desired item by using [LEFT/RIGHT] key.
White Balance Mode changes as follows:
ATW → PUSH → MWB → OUTDOOR → INDOOR

① ATW (Auto-Tracing White Balance)

☛ Position the cursor beside WHITE BALANCE and select ATW by using [LEFT/RIGHT] key.

ATW is a feed forward system that automatically aligns the white balance by detecting the R, G and B before WB amplifier. The color temperature range for ATW mode is approximately 2500K~9500K.

② PUSH

☛ Position the cursor beside WHITE BALANCE and select PUSH by using [LEFT/RIGHT] key.

White Balance is performed at a faster operating speed than ATW without an operation frame or other limitation. The color temperature rang for PUSH mode is approximately 2300K~10000K.

③ MWB (Manual White Balance)

1. Position the cursor beside WHITE BALANCE and select MWB by using [LEFT/RIGHT] key.
2. Press [SET] key to display the screen.
3. Press [LEFT] key to shift to lower color temperature or press [RIGHT] key to shift to higher color temperature.
4. Press [SET] key and return to SETUP MENU 1/2.

The color temperature range for MWB mode is approximately 250K~9500K.

④ OUTDOOR

☛ Position the cursor beside WHITE BALANCE and select OUTDOOR by using [LEFT/RIGHT] key.

The color temperature is fixed at 6300K for Outdoor mode.

⑤ INDOOR

☛ Position the cursor beside WHITE BALANCE and select INDOOR by using [LEFT/RIGHT] key.

The color temperature is fixed at 3200K for Indoor mode.

FLICKERLESS

☛ Position the cursor beside FLICKERLESS and select OFF/ON by using [LEFT/RIGHT] key.

Used only when the power source frequency is different from camera signal system.

NOTES

1. Only available with AUTO or WDR of EXPOSE MODE.
2. If EXPOSE MODE set as "MANUAL" and Shutter Speed set as 1/100 sec. (NTSC) or 1/120 sec.(PAL), then it can perform Flickerless function.

SYNC MODE

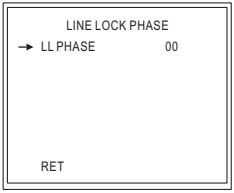
① INT (Internal Synchronization)

☛ Position the cursor beside SYNC MODE and select INT by using [LEFT/RIGHT] key.

Sync mode is fixed to INT in DC12V power input.

② LL (Line-Lock Synchronization)

1. Position the cursor beside SYNC MODE and select LL by using [LEFT/RIGHT] key.
2. Press [SET] key to display the LINE LOCK PHASE menu.
3. Adjust LL PHASE value by using [LEFT/RIGHT] key.



NOTES

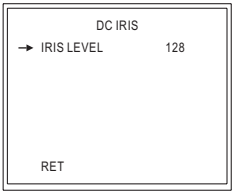
1. NTSC — LL PHASE adjustment range 00~524(Each step is about 0.69° and the range is from 0° to 360°).
2. PAL — LL PHASE adjustment range 00~624(Each step is about 0.58° and the range is from 0° to 360°).

4. Position the cursor beside RET and press [SET] key and return to SETUP MENU 1/2.

AUTO IRIS LENS

① DC (Direct Drive)

1. Position the cursor beside AUTO IRIS LENS and select DC by using [LEFT/RIGHT] key.
2. Press [SET] key to display the DC IRIS menu.
3. Adjust IRIS LEVEL value by using [LEFT/RIGHT] key.
   · IRIS LEVEL: 106~160.



4. Position the cursor beside RET and press [SET] key and return to SETUP MENU 1/2.

② VIDEO (Video Signal Drive)

☛ Position the cursor beside AUTO IRIS LENS and select VIDEO by using [LEFT/RIGHT] key.

NOTE

If using auto iris lens please don't set the iris level of lens in very low level or it may case Hunting phenomenon or failure on Auto function of IR CUT REMOVE (Color mode / Mono mode image can not switch).

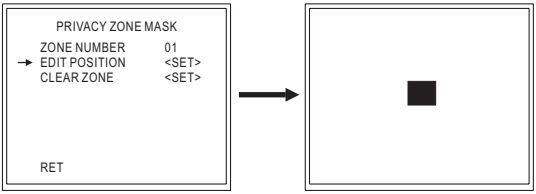
PRIVACY MASK

① OFF

☛ Position the cursor beside PRIVACY MASK and select OFF by using [LEFT/RIGHT] key.

② ON

1. Position the cursor beside PRIVACY MASK and select ON by using [LEFT/RIGHT] key.
2. Press [SET] key to display the PRIVACY ZONE MASK menu.
3. Up to 8 mask zones can be set up.
   A. Position the cursor beside ZONE NUMBER and using [LEFT/RIGHT] key to select a zone.
   B. Position the cursor beside EDIT POSITION and press [SET] key to display the mask zone block, use [LEFT/RIGHT/UP/DOWN] key to move the masked zone to desired location, then press [SET] key switch to zone scale adjustment, and use [LEFT/RIGHT] key to increase/decrease the H-direction zone size or [UP/DOWN] key to increase/decrease the V-direction zone size, then press [SET] key to save.



   C. Position the cursor beside CLEAR ZONE and press [SET] key to clear the masked zones.
   D. Position the cursor beside RET and press [SET] key and return to SETUP MENU1/2.

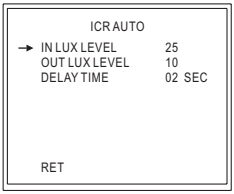
IR CUT REMOVE

☛ Position the cursor beside IR CUT REMOVE and select desired item.
IR Cut Remove Mode changes as follows:

→ AUTO → IN → OUT → SCHEDULE → EXTCTRL

① AUTO

1. Position the cursor beside IR CUT REMOVE and select AUTO by using [LEFT/RIGHT] key.
2. Press [SET] key to display the ICR AUTO menu.



3. Position the cursor beside IN LUX LEVEL and select Level by using [LEFT/RIGHT] key.
   When light level is higher than IN LUX LEVEL, IR Cut Filter switches ON automatically to produce color image.
   · IN LUX LEVEL: 20~30 (about 20Lux ~ 30Lux)
4. Position the cursor beside OUT LUX LEVEL and select Level by using [LEFT/RIGHT] key.
   When light level drops below OUT LUX LEVEL, IR Cut Filter switches OFF automatically to produce B/W image.
   · OUT LUX LEVEL: 5~15 (about 5Lux ~ 15Lux)
5. Position the cursor beside DELY TIME and select Delay Time by using [LEFT/RIGHT] key.
   The color and B/W mode switch delay time prevents the image turning from color to B/W or B/W to color too quickly under unstable light condition.
   · DELAY TIME: 00~10 Sec.
6. Position the cursor beside RET and press [SET] key and return to SETUP MENU 2/2.

NOTES

1. Please don't set the value of IN LUX LEVEL and OUT LUX LEVEL too close or it may case Hunting phenomenon. Recommend to set at least 15Lux different.

2. If Low Lux Mode set as "AGCSLOW", "SLOW" or "OFF", the setting options of IR CUT REMOVE are "IN", "OUT", "SCHEDULE" or "EXTCTRL" but "AUTO" function of IR CUT REMOVE is invalid.
3. If EXPOSE MODE set as "MANUAL" and Manual Shutter Speed set as 1/500, 1/10,000 ..... 1/50,000 Sec., the setting options of IR CUT REMOVE are "IN", "OUT", "SCHEDULE" or "EXTCTRL" but "AUTO" function of IR CUT REMOVE is invalid.

② IN

☛ Position the cursor beside IR CUT REMOVE and select IN by using [LEFT/RIGHT] key.

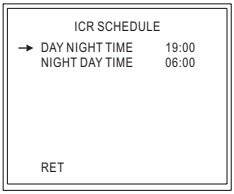
IR Cut Filter is ON to produce clear color image.

③ OUT

☛ Position the cursor beside IR CUT REMOVE and select OUT by using [LEFT/RIGHT] key.

IR Cut Filter is OFF to produce constant B/W image.

④ SCHEDULE



1. Position the cursor beside IR CUT REMOVE and select SCHE.. by using [LEFT/RIGHT] key.
2. Press [SET] key to display the ICR SCHEDULE menu.
3. Position the cursor beside DAY NIGHT TIME and press [SET] key.
   Select required time to switch from DAY (color mode) to NIGHT (B/W mode) by using [LEFT/RIGHT] key.
4. Position the cursor beside NIGHT DAY TIME and press [SET] key.
   Select required time to switch from NIGHT (B/W mode) to DAY (color mode) by using [LEFT/RIGHT] key.
5. Position the cursor beside RET and press [SET] key and return to SETUP MENU 2/2.

⑤ EXTCTRL

1. Position the cursor beside IR CUT REMOVE and select EXTC.. by using [LEFT/RIGHT] key.
2. Press [SET] key to display the ICR EXTERNAL CTRL menu.
3. Position the cursor beside INPUT POTENTIAL and select LOW or HIGH by using [LEFT/RIGHT] key.
   This function allows the usage of external(TTL) device to control camera switching from DAY to NIGHT mode or NIGHT to DAY mode triggered by HIGH (+3V ~ +5V) potential or LOW (0V) potential.
4. Position the cursor beside RET and press [SET] key and return to SETUP MENU 2/2.

```
ICR EXTERNAL CTRL
→ INPUT POTENTIAL     LOW

RET
```

IMAGE

☛ Position the cursor beside IMAGE and press [SET] key to display IMAGE FUNCTION menu.

① PEDESTAL

☛ Position the cursor beside PEDESTAL, adjust the Pedestal Level (Black Level) by using [LEFT/RIGHT] key.

· PEDESTAL: 09~15.

```
IMAGE FUNCTION
→ PEDESTAL        12
  APERTURE        10
  GAMMA           03
  MIRROR          OFF
  FLIP            OFF
  Y NEGATIVE      OFF

RET
```

② APERTURE

☛ Position the cursor beside APERTURE, adjust the Aperture Level by using [LEFT/RIGHT] key.

· APERTURE: 00~15.

③ GAMMA

☛ Position the cursor beside GAMMA, adjust the Gamma Level by using [LEFT/RIGHT] key.

· GAMMA: 00~07.

④ MIRROR

☛ Position the cursor beside MIRROR and select OFF/ON by using [LEFT/RIGHT] key.

This mode reverses the left and right sides of the linear.

MIRROR = OFF

(Normal)

MIRROR = ON

(Right and left reversal)

⑤ FLIP

☛ Position the cursor beside FLIP and select OFF/ON by using [LEFT/RIGHT] key.

This mode reverses the top and bottom sides of the linear.

FLIP = OFF

(Normal)

FLIP = ON

(Vertical reversal)

⑥ Y NEGATIVE

☛ Position the cursor beside Y NEGATIVE and select OFF/ON by using [LEFT/RIGHT] key.

This function inverse the Y signal.

OFF: Positive

ON : Negative

ELECTRONIC P/Z

☛ Position the cursor beside ELECTRONIC P/Z and press [SET] key to display ELECTRONIC P/Z menu.

① EPAN SPD

☛ Position the cursor beside EPAN SPD, adjust the Electronic Pan Speed by using [LEFT/RIGHT] key.

· EPAN SPD: 05~10.

ELECTRONIC P/Z

→ EPAN SPD 08
EZOOM SPD 01
EPAN OPERATION OFF
EZOOM OPERATION ON

RET

② EZOOM SPD

☛ Position the cursor beside EZOOM SPD, adjust the Electronic Zoom Speed by using [LEFT/RIGHT] key.

· EZOOM SPD: 01~15.

③ EPAN OPERATION

☛ Position the cursor beside EPAN OPERATION and select OFF/ON by using [LEFT/RIGHT] key.

NOTE

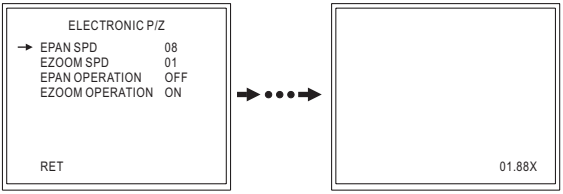
If set EPAN OPERATION "ON", Preset Privacy Zone will be turned "OFF".

④ EZOOM OPERATION

1. EZOOM OPERATION: ON
   A. Position the cursor beside EZOOM OPERATION and select ON by using [LEFT/RIGHT] key.
   B. Position the cursor beside RET and press [SET] key and return to SETUP MENU2/2.
   C. Position the cursor beside PREVIOUS and press [SET] key and return to SETUP MENU 1/2.

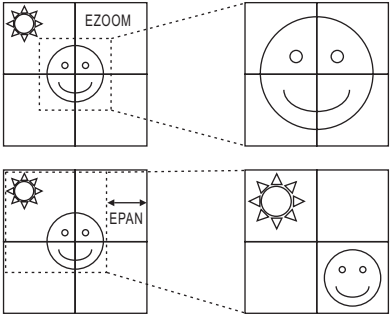
D. Position the cursor beside RET and press [SET] key to display screen, adjust the Electronic Zoom Magnification by using [LEFT/RIGHT] key. Magnification value of EZOOM will show up on the bottom-right of monitor.

· EZOOM Magnification: 01.00X ~ 02.56X.



2. EZOOM OPERATION: OFF

☛ Position the cursor beside EZOOM OPERATION and select OFF by using [LEFT/RIGHT] key.



EZOOM and EPAN operations

NOTES

1. If EXPOSE MODE set as "WDR", EPAN and EZOOM functions are invaild.
2. Preset magnification value of EZOOM (must excess 01.00X), and turn EPAN "ON". Then EPAN action can be viewed (image move left and right around) and larger magnification value, the longer moving around distance.

TITLE DISPLAY

☛ Position the cursor beside TITLE DISPLAY and press [SET] key to display TITLE SETUP menu.

① H POSITION

☛ Position the cursor beside H POSITION and select Horizontal Position of the title by using [LEFT/RIGHT] key.

· H POSITION: 01~15.

TITLE SETUP	
→ H POSITION	02
V POSITION	03
DATE	2006/01/01
TIME	15:00:00
DATE DISPLAY	OFF
TIME DISPLAY	OFF
CAMERA ID	OFF
DATE FORMAT	YYYY/MM/DD
RET	

② V POSITION

☛ Position the cursor beside V POSITION and select Vertical Position of the title by using [LEFT/RIGHT] key.

· V POSITION: 01~15.

③ DATE

☛ Position the cursor beside DATE and press [SET] key, adjust Year (Month or Date) by using [LEFT/RIGHT] key, then press [SET] key to enter.

④ TIME

☛ Position the cursor beside TIME and press [SET] key, adjust Hour (Minute or Second) by using [LEFT/RIGHT] key, then press [SET] key to enter.

⑤ DATE DISPLAY

☛ Position the cursor beside DATE DISPLAY and select OFF/ON by using [LEFT/RIGHT] key.

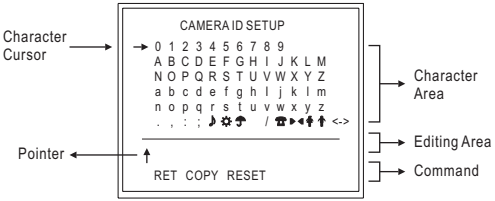
⑥ TIME DISPLAY

☛ Position the cursor beside TIME DISPLAY and select OFF/ON by using [LEFT/RIGHT] key.

⑦ CAMERA ID

1. Position the cursor beside CAMERA ID and select OFF/ON by using [LEFT/RIGHT] key.
   OFF: CAMERA ID SETUP is not displayed.
   ON : CAMERA ID SETUP is displayed on the screen.

2. Press [SET] key to display the CAMERA ID SETUP menu.



3. New Camera ID Setup
   A. Position the cursor beside desired character, and using [LEFT/RIGHT] key to confirm.
   B. Press [SET] key to enter. The selected character is displayed in editing area (The pointer in the editing area moves one space to the right automatically).
   C. Repeat the above procedure until all characters are entered. Maximum 16 characters for Camera ID.

4. To Copy a Camera ID to Another Position
   A. Position the cursor beside COPY and press [SET] key, first character of the ID is copied and the pointer is pointing at the first character. When [SET] key is pressed again, second character will be copied.
   B. Repeat this process until all desired characters are selected.

5. To Change a Camera ID
   A. Position the cursor beside Pointer.
   B. Point the Pointer to the character to be edited in the editing area using [LEFT/RIGHT] key.

C. Position the cursor beside desired character, and using [LEFT/RIGHT] key to confirm.
D. Press [SET] key to change the character.

6. To Delete Camera ID
Move the cursor to RESET and press [SET] key to delete.

> **NOTE**
> If any of these 3 functions, "DATE DISPLAY", "TIME DISPLAY" or "CAMERA ID", has been turned "ON", magnification value of EZOOM will show below the Date, Time & Camera ID.

⑧ DATE FORMAT
☛ Position the cursor beside DATE FORMAT and select YYYY/MM/DD, MM/DD/YYYY or DD/MM/YYYY.

FACTORY

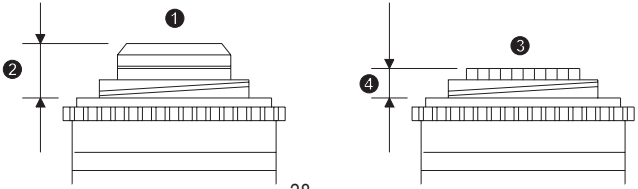
☛ Position the cursor beside FACTORY and press [SET] key. The camera is reset to the factory default parameters.

INSTALLATION

- **SUITABLE LENSES**

The lens must be either a C or CS mount type. The protrusion behind the mounting surface must be within the following limits:

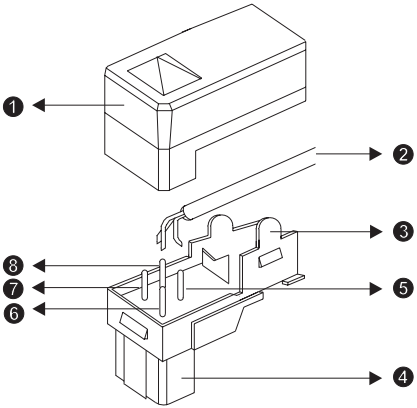
❶	C - mount lens	❸	CS - mount lens
❷	9mm or less	❹	4mm or less



● CHANGING THE PLUG ON AN AUTO IRIS LENS CABLE

The camera is supplied with a plug to fit the AUTO IRIS connector. To connect an auto iris lens, first replace the plug on the lens cable with the supplied plug.

Solder the lens cable to the pins of the supplied plug (For cable pin assignment, refer to the instruction manual for the lens.).



❶	Cover		
❷	Lens cable		
❸	Rib (If the cable is thick, cut this off.)		
❹	Plug (Unit accessory)		
❺	Pin 4	Video signal control	Ground
		DC control	Drive -
❻	Pin 2	Video signal control	Vcc
		DC control	Control +
❼	Pin 1	Video signal control	Not used
		DC control	Control -
❽	Pin 3	Video signal control	Video signal
		DC control	Drive +

● FITTING THE LENS

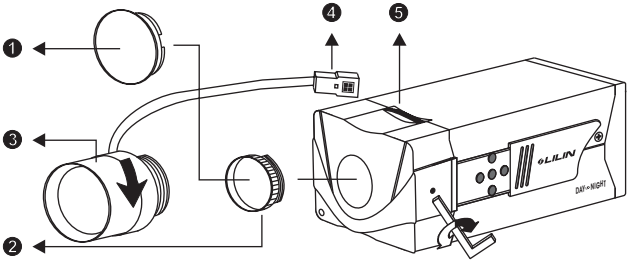
① Remove the lens mount cap.

② Screw in the C mount ring(not supplied), unit it is secured. When using a CS mount lens skip step2.

③ Screw in the lens, unit it is secured.

④ Insert the lens plug in the AUTO IRIS connector, when fitting a manual-iris lens, skip step4.

⑤ Adjust the focal length by turning the focal length adjustment ring. (Using hexagon screw driver, loose and tighten the screw on side of the camera)

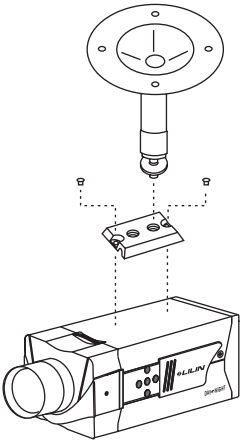


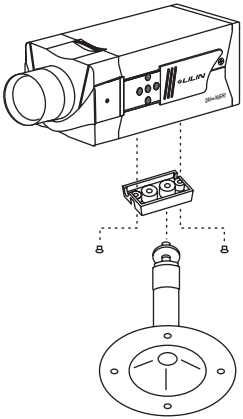
CAUTION

Keep the lens mount cap on the camera when not attaching a lens.

● FITTING THE CAMERA

1. The mounting base can be attached to either the top or bottom of the camera.
2. Tighten the screw to attach the mounting base. Please refer to the following drawing.



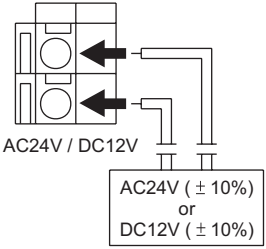


● CONNECTION OF POWER SUPPLY CABLE (AC24V or DC12V)

Connect to the power supply.
Please refer to the right drawing.

NOTE

Make sure to use AC24V or DC12V (Non-Polarity input) power supply.



SPECIFICATIONS

Wide Dynamic Range Day&Night Camera				
Model No.	PIH-8176N	PIH-8178N	PIH-8176P	PIH-8178P
Power Input Voltage	DC12V ±10% AC24V ±10%	AC90 ~ 260V	DC12V ±10% AC24V ±10%	AC90 ~ 260V
Pick Up Element	1/3" Vertical Double-Density Interline CCD Sensor			
Effective Pixels	768(H) x 494(V)		752(H) x 582(V)	
Chip Size	6.00mm(H) x 5.00mm(V)			
Horizontal & Vertical Sync. Frequency	15.734KHz / 59.94Hz		15.625KHz / 50Hz	
Scanning System	2 : 1 Interlace			
Menu Control	OSD Control			
Sync. Mode	Line-Lock / Internal ; DC12V: Sync. Mode is fixed to Internal			
IR Cut Filter	Auto / In / Out / Schedule / Extctrl			
Resolution	Color : 480TV Lines , Mono : 520TV Lines			
Minimum Illumination	Color : 0.005Lux / F1.2 (Sense Up x 160)			
	Mono : 0.001Lux / F1.2 (Sense Up x 160)			
S/N Ratio	More Than 50dB (AGC OFF)			
Auto Gain Control	Low (8dB) / Medium (22dB) / High (36dB)			
White Balance	ATW / PUSH / MWB / Indoor(3200K) / Outdoor(6300K)			
Aperture Correction	Horizontal & Vertical Gain Adjustable			
Expose Mode	Auto / Manual / WDR			
Auto — Shutter Speed Min.	1/60(1/50)S ~ 1/200S			
Auto — Shutter Speed Max.	1/500S ~ 1/100,000S			
Manual Shutter Speed	1/60(1/50)S ~ 50,000S			
Low Lux Mode	Off / Slow / AGCSlow / AGC			
Slow Shutter Speed	0Fld/2 ~ 20Fld / 40Fld / 80Fld / 160Fld / 320Fld / 510Fld			
Wide Dynamic Range	400 : 1			
Back Light Compensation	Off / Fix WGT. / Auto WGT.			
Electronic Zoom	On (2.56X Max.) / Off WDR: Electronic Pan & Zoom is Unavailable			
Electronic Pan	Horizontal Direction can be operated (According to the zoom magnification)			
Image Setting	Pedestal / Aperture / Gamma / Mirror / Filp / Y Negative			
Privacy Masking	On / Off			
Privacy Masking Zone	8 Zones			
Flickerless Mode	On / Off			
Video Output	CVBS 1.0Vp-p , 75Ohm			
Audio Output	Yes			
Lens Mount	C or CS Mount			
Auto Iris Drive	Direct Drive(DC) or Video Drive			
Gamma Characteristic	Adjustable			
Power Consumption	5.2W(DC12V) 4.0W(AC24V)	5.3W	5.2W(DC12V) 4.0W(AC24V)	5.3W
Operating Temperature	-10℃ ~ +50℃ (14°F ~ 122°F)			
Dimension	64mm(W) x 56mm(H) x 126mm(D)			
Weight	700g			

Design and specifications are subject to change without notice. 66-817CSE-1

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http://www.meritlilin.com

66-817CSE