



Installation Manual

I-Sniper VANDAL DAY/NIGHT DOME CAMERA



· EL-750



Important Safety Instructions

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 a 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 is 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. Use only attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as the power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. The power plug must be readily accessible so that the equipment can be easily disconnected from the AC power.
15. The product is still connected to the AC power whenever it is plugged in to a live power outlet, even if the receiver is turned off using the remote control or front panel buttons.
16. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

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.

Warning and Attention Symbols

You must remember certain safety issues during installation and use of this equipment. This guide provides various procedures and instructions. Some of these procedures could result in injury or property damage if they are improperly performed. Other procedures require additional attention.

In this guide, we use the following notation to inform you when you need to pay attention to a safety or operational issue.



Designates a potential situation where the following may happen:

- Personal injury or death may occur.
- Equipment or property may be damaged.



Designates the following operational issues:

- Important operation or maintenance instructions follow.
- Additional attention is required.

For Your Safety



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The Class II equipment symbol means the equipment has additional insulation and does not need to be grounded.

Table of contents

1. Precautions	5
2. Limitation of liability	5
3. Disclaimer of warranty	6
4. Package	6
5. Main Features	7
6. Assembly overview	8~10
7. Troubleshooting	11
8. Dimension (mm)	12
9. Specification	13
10. OSD Manual for function control.....	14~17

1. Precautions

- Please read the manual carefully before the installation in order to make use the camera to be set up correctly and to have the best picture quality.
- Please keep the manual in good condition for your future reference and service application.
- Installation and services should only be carried out by an authorized personnel according to local safety regulations.
- If any liquid or solid matter gets into the housing, immediately disconnect the camera from power supply and have it checked by your authorized dealer before reusing.
- Avoid installing the camera at extremely hot or cold places.
- If you are not a certified person, never try to dismantle the camera. To avoid electric shock, never remove the screws or covers. There are no parts inside that need maintenance by the user. All maintenance should be carried by qualified personnel.
- Avoid installing the camera at a place of high humidity.
- Avoid installing the camera at the place exposed to gas or oil.
- Keep the top glass of the lens always clean in order to obtain the best picture quality all the time. Be careful not to be stained by fingerprint.
- Don't face the camera directly toward sunlight or sunlight reflecting area. CCD may go defective at this condition.
- Please give a special attention to keep the unit from dangerous drop or external shock during the process of transportation or handling.
- Never try to touch the camera in wet hand. It may cause an electric shock.
- Do not expose the camera to radioactivity. It causes a serious damage on the CCD.

2. Limitation of liability

This publication is provided "AS IS" without warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for any particular purpose, or noninfringement of the third party's right. This publication could include technical inaccuracies or typographical errors. Changes are added to the information herein, at any time, for the improvements of this publication and/or the corresponding product(s).

3. Disclaimer of warranty

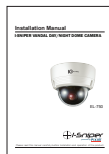
In no event shall seller be liable to any party or any person, except for replacement or reasonable maintenance of the product, for the cases, including but not limited to below :

- (1) Any damage and loss, including without limitation, direct or indirect, special, consequential or exemplary, arising out of or relating to the product;
- (2) Personal injury or any damage caused by inappropriate use or negligent operation of the user;
- (3) unauthorized disassemble, repair or modification of the product by the user;
- (4) Inconvenience or any loss arising when images are not displayed, due to any reason or cause including any failure or problem of the product;
- (5) Any problem, consequential inconvenience, or loss or damage, arising out of the system combined by the devices of third party.
- (6) Any claim or action for damages, brought by any person or organization being photogenic subject, due to violation of privacy with the result of that surveillance—camera's picture, including saved data, for some reason, becomes public or is used for the purpose other than surveillance.

4. Package



Camera x1



Manual x1



Sticker x1



Torx Wrench x1



Extra Video output x1



Tapping Screws x3



Plastic anchor x3



Junction box plate x3



O-Ring x3



Machine Screw x3
M4x12L



Machine Screw x3
M4x5L

5. Main Features

- 1/3" I-Sniper PIXIM DPS image sensor
- 690TVL / 960H Effective Pixels
- 2.8-12mm Vari-Focal Lens
- WDR (Wide Dynamic Range)
- 2D/3D Digital Noise Reduction
- DIS (Digital Image Stabilizer)
- True Day and Night (ICR)
- Intelligent Functions
- Highlight Eclipse Function
- Digital Zoom
- Motion Detection
- Privacy Masking
- RS-485 Interface (Pelco-D)
- 12VDC/24VA Power Input



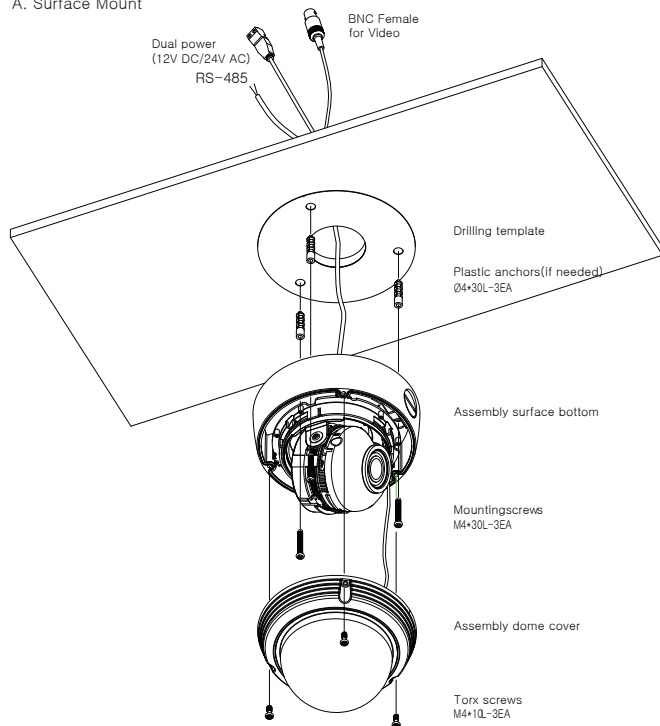
I-Sniper, the most accurate chip in the world, is an imaging solution created exclusively by Pixim for IC Realtime. I-Sniper cameras deliver clear, detailed images in real-world scenes, night and day, even under challenging, mixed lighting conditions.

I-Sniper cameras have been custom tuned with camera settings specifically for ICRealtime's line of DVRs, resulting in 25-45% longer recording times vs. nonoptimized 3rd party cameras.

6. Assembly overview

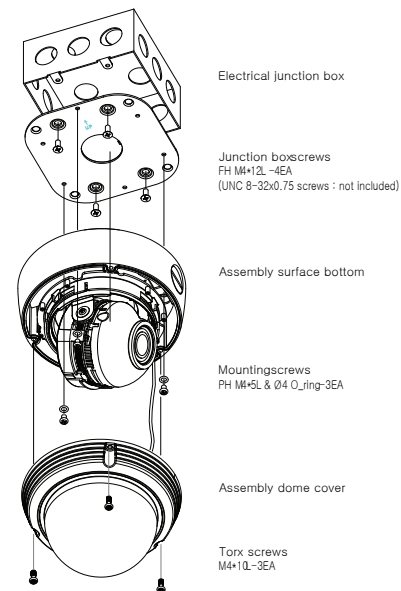
6-1. Installation

A. Surface Mount



- ① Paste a Drilling Template on the ceiling or wall and drill screw points which will be done for installation.
- ② Fix a Surface Mounting Base by using Tapping Screws with Ø 4 provided.
- ③ Point a Camera 3D Gimbal to a desired direction and assemble a dome cover to the Surface Mounting Base with Torx Screws by using Torx Wrench provided.

B. Junction Boxes

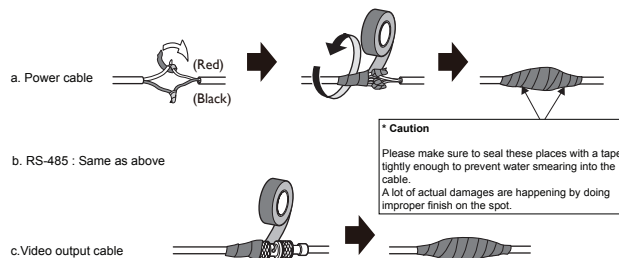


- ① Fix a Surface Mounting Base and Junction plate Gang Junction Box by using Fixed Screws with M4 provided.
- ② Assemble a dome cover to the Base with Torx screws.

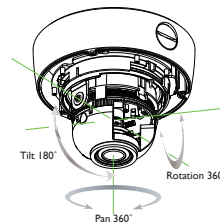
6-2. Waterproof processing of cable end connection

Make sure to use a butyl tape. (Do not use a sealing material on those parts)

- ① It is useful to connect the cable ends from camera to the extension cable for waterproof.
- ② Connect and tape the power cables (Power-Power/Ground-Ground).
- ③ Bind the power cables together with the tape. When DC-Jack is used, tape the DC-DC joint.
- ④ Connect and tape the RS485 cables (RS485+—TRX+ /RS485- —TRX-)
- ⑤ Tape the BNC-BNC joint.



6-3. 3-Axis, Lens adjustment



※ Tool-free 3-Axis mounting mechanism

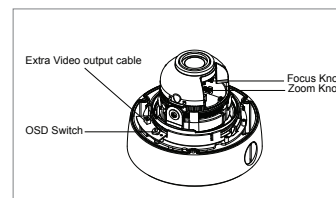
Perfect Tri-axis!

- Panning axis up to 360° degree
- Tilting axis up to 180° degree
- Rotation axis up to 360° degree

No need to use a tool for adjustment!
All adjustments are done quick and easy by hand!

NOTE

Angle adjustment from each of 3 different axis can be positioned to its maximum angle of view so that the camera gets the full central picture at any location.



· Focus Knob

LEFT Control : ∞

RIGHT Control : Near

· Zoom Knob

LEFT Control : Tele

RIGHT Control : Wide

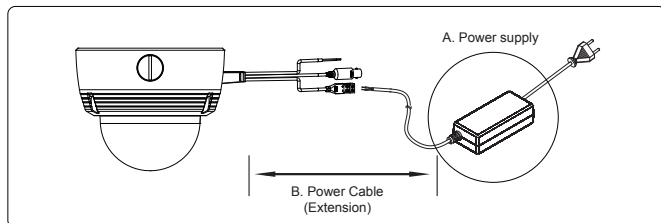
· Extra video output

To enable an installer to check and adjust the camera set up via service monitor on the spot.

◆ Connecting to POWER

A. Power connection (Power supply: (DC12V / AC24V)

The recommended adapter specification for EL-750 is DC12V/3A, AC24V/1A over.
Please check the standard power requirement before connecting the power.



B. Power Cable (Extension)

As the table below, voltage drops as the wire is longer so that the use of an excessively long power cable (or extension cable use) to the camera may affect the camera's performance.

Copper wire Size (AWG)	1.3mm ² (#16)	0.83mm ² (#18)	0.52mm ² (#20)	0.33mm ² (#22)	0.22mm ² (#24)
Resistance (Ω/m)	0.01	0.03	0.04	0.06	0.1
Voltage Drop(V/m)	0.019	0.03	0.049	0.068	0.113

The resistance value of Copper Wire : 25° C (77° F) °C

- Standard Voltage for proper camera operation is DC12V +/- 10% / AC24V +/- 10%
- AWG #24 : 10M is the maximum cable distance for proper operation.
Longer than 10 Meters, it may cause a damage to the product.
The manufacture is not liable for problems caused by an authorized installation.
- AWG26, AWG28: It is not recommended. It causes a severe damage to the camera.

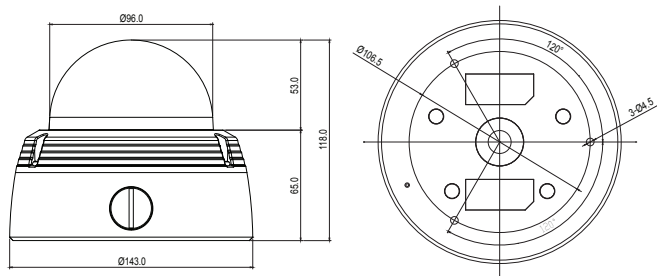
*Caution

- There may be a deviation in voltage drop depending on the type of wire and its manufacturer.
- Please Do connect one camera by the input power! No other devices!
- Please power on after installation finished.

7. Troubleshooting

Problems	Troubleshooting				
Nothing appears on the screen.	• Please check that the power cord and line connection between the camera and the monitor are fixed properly. • Please check that you have properly connected VIDEO cable to the camera. • VIDEO output jack. Check DC Iris cable on Lens is properly connected.				
The image on the screen is dim.	• Is lens stained with dirt? Clean your lens with soft, clean cloth. • Set the monitor to proper condition. • If the camera is exposed to too strong light, change the camera position.				
The image on the screen is dark.	• Adjust the contrast feature of the monitor. • If you have an intermediate device, set the 75Ω / Hi-Z properly (Please check the impedance)				
The camera is not working properly, and the surface of the camera is hot.	• Please check that you have properly connected the camera to an appropriate power source.				
Color is not correct.	• Please check the setting of WHITE BAL SETUP menu.				
The screen flickers continually.	• Please check that direction of camera is turned toward the Sun.				
RS-485 communication fails.	• Please check the polarity between RS-485 Control Port and RS-485 cable.				
	485 Control Board Connection Port		RS-485 Control Port		
	(+)CONNECTION TERMINAL(TRX+)		485+		
	(-)CONNECTION TERMINAL(TRX-)		485-		
	• Please check if the initial value of the RS-485 Communication setup matches between camera and OSD Controller or DVR.				
	* RS-485 Communication establishment initial value				
	Item	Camera ID	BAUD RATE	UART MODE	RET PKT
Initial value	1	9600	8-NONE-1	ENABLE	
• We recommend that you make ground connection between camera and controller for safe communication control. • When RS-485 cable is not properly connected, A warning message 'ERROR RS-485 Connection. Please reconnect and Reboot' is displayed. Then please turn off the power and connect the cable again.					

7. Dimension(mm)



8. Specification

General	EL-750
Image sensor	1/3" Pixim WDR digital image device
Effective pixels	410,000 pixels 758 (H) X 540 (V)
H.Resolution	690HTVL effective
Synchronizing system	Internal
Video output	1.0Vp-p Composite 75Ohms
S/N ratio	50dB(AGC OFF, Weight ON)
Min.Illumination	0 Lux
Shutter speed	1/25 sec ~ 1/30,720sec (Global Shutter)
Gamma control	Standard $\gamma=0.45$
White Balance	2000°K ~ 11,000°K Auto. ATW/ AWB selectable by OSD
Power source	12VDC  210mA / 24VAC ~ 210mA
Lens	2.8 ~ 12mm Varifocal Motorized Lens
IR Spectrum	850nm
Viewable distance	Up to 150ft at moonless night
Iris control	DC IRIS
MTBF of IR	20,000 hours
Operating temp	-10°C ~ 50°C
Humidity	0%RH ~ 90%RH
Measurement(mm)	143(dia) x 118(H)
Weight(Approx.g)	1,500
Function	
WDR	Low/ Normal /Middle/ High
AGC	Low/ Normal /High
BLC	On/Off
Fluorescent	Off/ CRR/ CRR2
ICR DVR Tool	Off/ EDGE/ MAX/ FLEX/ ELITE
RS485	Pelco-D
Flip	Off/ Horiz/ Vert/ Both

■ Specifications are subject to change without prior notice to enhance performance and stability.

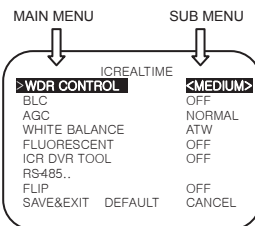
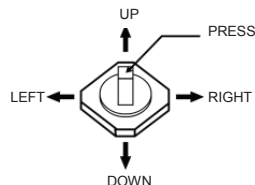
10. OSD Manual for functions control

OSD Menu Tree

ICREALTIME					
WDR CONTROL	LOW	NORMAL	MIDDLE	HIGH	
BLC	OFF	ON			
AGC	LOW	NORMAL	HIGH		
WHITE BALANCE	ATW	AWB..			
FLUORESCENT	OFF	CRR	CRR2		
ICR DVR TOOL	OFF	EDGE SERIES	MAX SERIES	FLEX SERIES	ELITE SERIES
RS-485	CAMERA #	PROTOCOL	BAUD RATE	RETURN	
FLIP	OFF	BOTH	VERT	HORIZ	
SAVE&EXIT	DEFAULT	CANCEL			

Setting up the menu

- Press the Tact SW to enter <MAIN MENU>
- Move the arrow to a specific menu by pushing the Tact SW up or down.
- Adjust the selected feature by pushing the Tact SW left or right



How to use OSD button (Tact SW)

- Press to enter the menu to save settings
- Push up or down to select functions
- Push left or right to adjust a level or mode of sub-menu

- When completed, move the arrow indicator to SAVE&EXIT and press the TACT SW to finish all settings.

1. WDR(Wide Dynamic Range) CONTROL

Light level is controllable with provided easy-to-use OSD menu that enables the camera to be ideally set up for the most of different levels of backlit or contrast lighting situations.

LOW : Dynamic range level similar to that of CCD cameras.

NORMAL: Suitable for most indoor scenes without windows or difficult lighting

MIDDLE: Suitable for normal outdoor scenes and indoor scenes that include windows.

HIGH : Maximum setting for harsh outdoor scenes

ICREALTIME	
<WDR CONTROL	<MEDIUM>
BLC	OFF
AGC	NORMAL
WHITE BALANCE	ATW
FLUORESCENT	OFF
ICR DVR TOOL	OFF
RS485..	OFF
FLIP	OFF
SAVE&EXIT	DEFAULT
	CANCEL

2.BLC(Back Light Compensation)

OFF : Highlights in image are prioritized.

ON : Shadows in image are prioritized.

ICREALTIME	
WDR CONTROL	MEDIUM
<BLC	<OFF>
AGC	NORMAL
WHITE BALANCE	ATW
FLUORESCENT	OFF
ICR DVR TOOL	OFF
RS485..	OFF
FLIP	OFF
SAVE&EXIT	DEFAULT
	CANCEL

3.AGC (Auto Gain Control)

LOW : Low gain limit.

NORMAL: Normal gain limit.

HIGH : High gain limit.

ICREALTIME	
WDR CONTROL	MEDIUM
BLC	OFF
<AGC	<NORMAL>
WHITE BALANCE	ATW
FLUORESCENT	OFF
ICR DVR TOOL	OFF
RS485..	OFF
FLIP	OFF
SAVE&EXIT	DEFAULT
	CANCEL

4. White Balance

The Automatic White Balance provides an extensive range color temperature control that covers from 2,000°K to 11,000°K generating natural color image without being red or blue in varying light conditions.

ATW : Auto-tracking white balance mode.

AWB : Set white balance now and lock it

ICREALTIME	
WDR CONTROL	MEDIUM
BLC	OFF
AGC	NORMAL
<WHITE BALANCE	<ATW>
FLUORESCENT	OFF
ICR DVR TOOL	OFF
RS485..	OFF
FLIP	OFF
SAVE&EXIT	DEFAULT
	CANCEL

5. Fluorescent

Color Rolling Reduction (CRR)

- OFF : Not used CRR.
 CRR : This color roll reduction mode will work with manual and auto-iris lenses. However, using it with auto-iris lenses typically results in noticeable levels of noise in shadows or dark areas in the image.
- CRR2 This color roll reduction mode works with auto-iris lenses ONLY. Noise levels are reduced in shadows or dark areas in the image compared to the noise levels present when using the CRR mode, but, dynamic range is also reduced further.

ICREALTIME		
WDR CONTROL	MEDIUM	
BLC	OFF	
AGC	NORMAL	
WHITE BALANCE	ATW	
>FLUORESCENT	<OFF>	
ICR DVR TOOL	OFF	
RS-485..		
FLIP	OFF	
SAVE&EXIT	DEFAULT	CANCEL

6. ICR DVR TOOL

Ideal setting with IC Realtime DVR series.

- OFF : Default Setting.
 EDGE SERIES : EDGE series
 MAX SERIES : MAX series
 FLEX SERIES : FLEX series
 ELITE SERIES : ELITE series

ICREALTIME		
WDR CONTROL	MEDIUM	
BLC	OFF	
AGC	NORMAL	
WHITE BALANCE	ATW	
FLUORESCENT	OFF	
>ICR DVR TOOL	<OFF>	
RS-485..		
FLIP	OFF	
SAVE&EXIT	DEFAULT	CANCEL

7. RS-485..

- CAMERA# : Available to set up from 1 to 255.
 PROTOCOL : Supports PELCO-D.
 BAUD RATE : Select a baud rate.(2400, 4800, 9600, 19200)
 RETURN. Move to MAIN MENU.

ICREALTIME		
WDR CONTROL	MEDIUM	
BLC	OFF	
AGC	NORMAL	
WHITE BALANCE	ATW	
FLUORESCENT	OFF	
ICR DVR TOOL	<OFF>	
>RS-485..	<OFF>	
FLIP	OFF	
SAVE&EXIT	DEFAULT	CANCEL

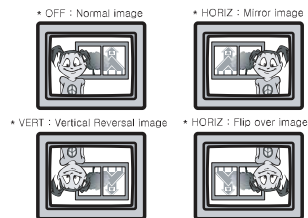
*How to control OSD menu over RS485:
 "PRESET" key or "IRIS OPEN" key.

- 1) Set communication speed on the camera to 9600bps.
- 2) Accord the ID of the camera with the DVR or PTZ controller. The factory default ID of the camera is "CAM1".
- 3) On the DVR or PTZ controller, press 95 then press
- 4) When the MAIN MENU pops up on the screen, move the cursor using a joystick to the desired menu to control. When entering a Sub menu, press "IRIS OPEN" momentarily.

RS485 SETUP		
>CAMERA #	<1>255	
PROTOCOL	PELCO-D	
BAUD RATE	9600	
RETURN		

8. FLIP

Adjustable to OFF, HORIZ, VERT, BOTH.



ICREALTIME		
WDR CONTROL	MEDIUM	
BLC	OFF	
AGC	NORMAL	
WHITE BALANCE	ATW	
FLUORESCENT	OFF	
ICR DVR TOOL	OFF	
RS485..		
>FLIP	<OFF>	
SAVE&EXIT	DEFAULT	CANCEL

9. SAVE&EXIT

Saves the current settings and exits the menu.

ICREALTIME		
WDR CONTROL	MEDIUM	
BLC	OFF	
AGC	NORMAL	
WHITE BALANCE	ATW	
FLUORESCENT	OFF	
ICR DVR TOOL	OFF	
RS485..		
FLIP	OFF	
>SAVE&EXIT	DEFAULT	CANCEL

10. DEFAULT

All the settings will be restored to the factory default.

Note.
 RS-485 settings are not initialized.

ICREALTIME		
WDR CONTROL	MEDIUM	
BLC	OFF	
AGC	NORMAL	
WHITE BALANCE	ATW	
FLUORESCENT	OFF	
ICR DVR TOOL	OFF	
RS485..		
FLIP	OFF	
SAVE&EXIT	>DEFAULT	CANCEL

11. CANCEL

Not saves the current settings and exits the menu.

ICREALTIME		
WDR CONTROL	MEDIUM	
BLC	OFF	
AGC	NORMAL	
WHITE BALANCE	ATW	
FLUORESCENT	OFF	
ICR DVR TOOL	OFF	
RS485..		
FLIP	OFF	
SAVE&EXIT	DEFAULT	>CANCEL