ES30PC/ES31PC Esprit® with Pressurized IOC

U.S. Patent D-472.260

C311M-N (6/06)

Contents

List of Tables

Important Safety Instructions

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

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

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

7. Only use attachments/accessories specified by the manufacturer.

8. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

9. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been 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.

10. Installation should be done only by qualified personnel and conform to all local codes.

11. Unless the unit is specifically marked as a NEMA Type 3, 3R, 3S, 4, 4X, 6, or 6P enclosure, it is designed for indoor use only and it must not be installed where exposed to rain and moisture.

12. Use only installation methods and materials capable of supporting four times the maximum specified load.

13. Use stainless steel hardware to fasten the mount to outdoor surfaces.

14. To prevent damage from water leakage when installing a mount outdoors on a roof or wall, apply sealant around the bolt holes between the mount and mounting surface.

15. AN ALL-POLE MAINS SWITCH with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building.

16. A readily accessible disconnect device shall be incorporated in the building installation wiring.

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 that contained in the operating instructions unless you are qualified to do so.

Only use replacement parts recommended by Pelco.

After replacement/repair of this unit's electrical components, conduct a resistance measurement between the line and exposed parts to verify the exposed parts have not been connected to the line circuitry.

The product and/or manual may bear the following marks:

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

WARNING: HAZARDOUS MOVING PARTS. KEEP FINGERS AND OTHER BODY PARTS AWAY.

CAUTION:
RISK OF ELECTRIC SHOCK. DO NOT OPEN.

Regulatory Notices

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.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits of a Class B 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 used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You may also find helpful the following booklet, prepared by the FCC: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

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

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

Description

The ES30PC/ES31PC Esprit Series is designed to protect camera optics and electronics from moisture and airborne contaminants. The system features a receiver, pan and tilt, enclosure, and a pressurized integrated optics cartridge (IOC). The integrated optics cartridge packages an auto focus camera, lens, heater, and sensors in a small, self-contained unit pressurized to 10 psig with dry nitrogen.

MODELS

ES30PC16   Standard resolution, color camera with 160X zoom (16X optical zoom and 10X electronic zoom)

ES31PC16   Same as ES30PC16, except supplied with window wiper

ES30PC22   High resolution, color camera with LowLight™ technology, 220X zoom (22X optical zoom and 10X electronic zoom)

ES31PC22   Same as ES30PC22, except supplied with window wiper

ES30PCBW24   High resolution, color/black and white camera with infrared cut filter, 240X zoom (24X optical zoom and 10X electronic zoom)

ES31PCBW24   Same as ES30PCBW24, except supplied with window wiper

Model Numbers

Model		Format	Pedestal Mount		Wall Mount	
			24 VAC	120/230 VAC	24 VAC	120/230 VAC
16X Color	Standard	NTSC	ES30PC16-2N	ES30PC16-5N	ES30PC16-2W	ES30PC16-5W
		PAL	ES30PC16-2N-X	ES30PC16-5N-X	ES30PC16-2W-X	ES30PC16-5W-X
	With Wiper	NTSC	ES31PC16-2N	ES31PC16-5N	ES31PC16-2W	ES31PC16-5W
		PAL	ES31PC16-2N-X	ES31PC16-5N-X	ES31PC16-2W-X	ES31PC16-5W-X
22X Color	Standard	NTSC	ES30PC22-2N	ES30PC22-5N	ES30PC22-2W	ES30PC22-5W
		PAL	ES30PC22-2N-X	ES30PC22-5N-X	ES30PC22-2W-X	ES30PC22-5W-X
	With Wiper	NTSC	ES31PC22-2N	ES31PC22-5N	ES31PC22-2W	ES31PC22-5W
		PAL	ES31PC22-2N-X	ES31PC22-5N-X	ES31PC22-2W-X	ES31PC22-5W-X
24X Color/B-W	Standard	NTSC	ES30PCBW24-2N	ES30PCBW24-5N	ES30PCBW24-2W	ES30PCBW24-5W
		PAL	ES30PCBW24-2N-X	ES30PCBW24-5N-X	ES30PCBW24-2W-X	ES30PCBW24-5W-X
	With Wiper	NTSC	ES31PCBW24-2N	ES31PCBW24-5N	ES31PCBW24-2W	ES31PCBW24-5W
		PAL	ES31PCBW24-2N-X	ES31PCBW24-5N-X	ES31PCBW24-2W-X	ES31PCBW24-5W-X

Installation

1. When installing the ES30PC/ES31PC Esprit® system, allow for sufficient clearance between the top of the unit and overhead obstructions. This will prevent interference when the enclosure is driven to its maximum elevation of 33 degrees.

MODEL	ES30	ES31
A	16.6 (42.5)	16.9 (42.9)
B	9.4 (23.9)	9.7 (24.6)
C	7.1 (18.1)	7.6 (19.2)
D	4.2 (10.7)	4.6 (11.7)
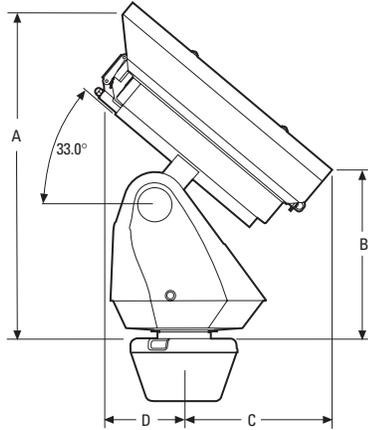
NOTE: VALUES IN PARENTHESES ARE CENTIMETERS;
ALL OTHERS ARE INCHES.

2. Remove the transformer module from the base of the system by loosening the four Phillips screws and lifting the module.
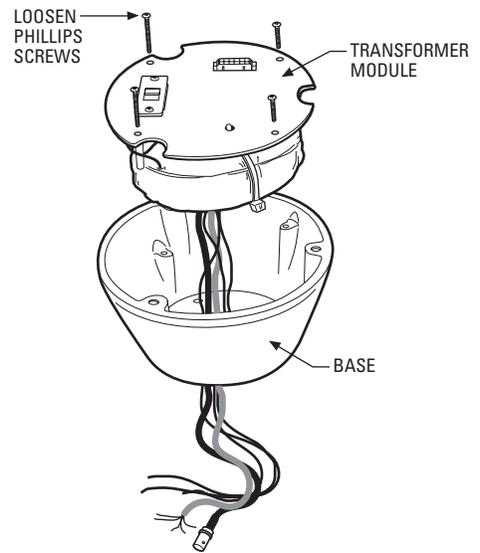
3. Attach the base of the system to an Esprit mount (EWM or EPP) with the three flathead 10-32 x 1/2-inch screws and washers (supplied).
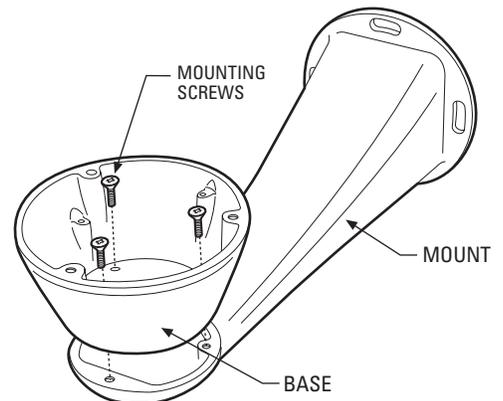
4. Route the wires and cables through the center of the Esprit mount. Reinstall the transformer module into the base. The transformer module can be positioned in the mount base in only one orientation.

120/230 VOLTAGE SELECTOR SWITCH
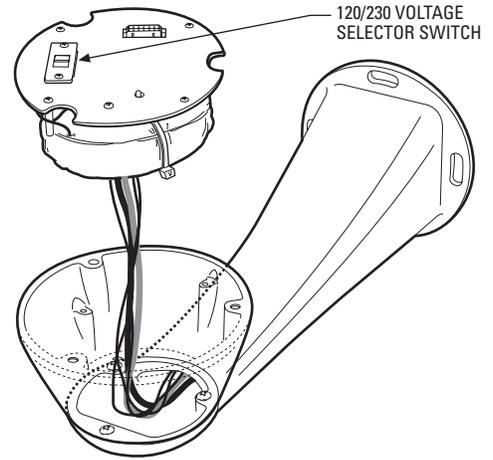
5. ES30PC-5/ES31PC-5 Models Only – Set the 120/230 voltage selector switch on the transformer to the appropriate voltage.

6. Connect wires and cables.

    a. Connect to power. Use the two supplied clamp connectors to connect the AC line and neutral.

120/230 VAC	
Black wire	Input (AC Line)
White wire	AC Neutral
Green wire	Ground

24 VAC	
White wire	Input (AC Line)
White wire	AC Neutral
Green wire	Ground

    b. Connect the video coaxial cable to the BNC connector.

    c. Connect the wiring for a two-wire or four-wire control system. This step does not apply to Coaxitron® control systems.

Green wire	RX-
Red wire	RX+
Black wire	TX-
White wire	TX+

    d. Connect AUX 2 (optional). Refer to the schematic drawing for an example of how to wire AUX2.

Orange wire	AUX 2
Blue wire	AUX 2 COMMON

AUX2 Schematic Drawing
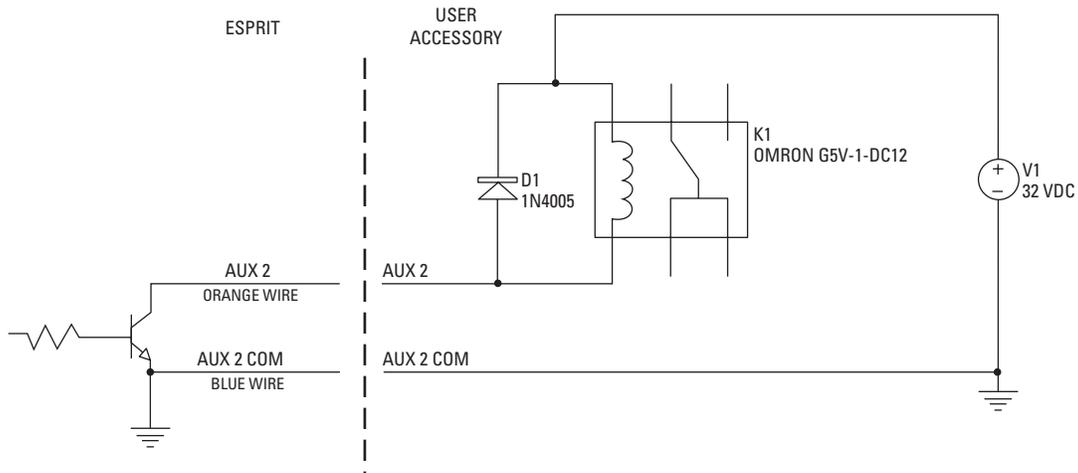
NOTE: CURRENT MUST NOT EXCEED 40 mA.

7. Install mount; refer to the installation manual supplied with the mount for instructions.

8. Turn on the power. If the red LED lights, turn off the power and proceed to the next step. If the red LED does not light, refer to the *Troubleshooting* section.

9. Plug the male Esprit system connector, located on the bottom of the pan and tilt, into the female Esprit system connector located on the transformer module. Align the pan and tilt part number with the alignment label of the base and then attach the pan and tilt to the base with three 1/4-20 nuts and washers (supplied).
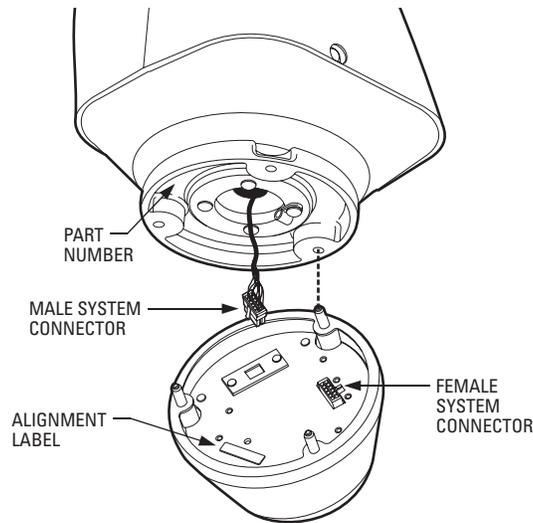
10. Set the receiver address and system baud rate by configuring DIP switches SW1 and SW2.

NOTE: If you have a Coaxitron controller, you do not have to set the DIP switches. The Esprit will sense and automatically select settings from Coaxitron control signals in either standard or extended mode.

To set the DIP switches:

a. Remove the plug from the left cover of the pan and tilt. It is not necessary to remove the pan and tilt cover.

b. Set the baud rate (SW1) and receiver address (SW2). For switch settings refer to the labels located on top of the camera module or Tables A and B in the "Appendix" on page 63.

c. Replace the plug.
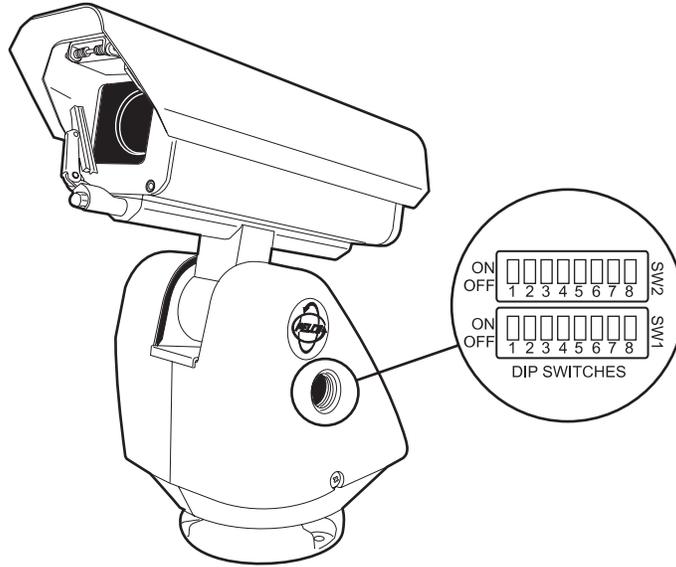
11. Refer to the Operation and Programming sections for instructions on how to use your ES30PC/ES31PC Series Esprit integrated positioning system.

TXB Series Translator Board Installation (Optional)

Pelco's TXB Series allows controllers from other companies to communicate with the Esprit system.

To install a TXB Series board, remove the left cover of the pan and tilt. Once the cover is removed, refer to the manual supplied with the translator board to complete the installation.

HOW TO REMOVE THE PAN AND TILT COVER

1. Unscrew the Phillips head screw located on the left cover of the pan and tilt.

2. Remove cover and place to the side.

PLUG

PHILLIPS
SCREW
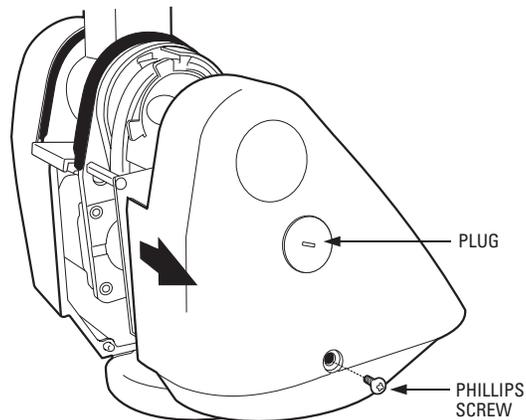
HOW TO REINSTALL THE PAN AND TILT COVER

The pan and tilt covers must be properly seated and have a tight seal all the way around when installed.

NOT SEALED

THIS SIDE IS
IMPROPERLY
INSTALLED

THIS SIDE IS
PROPERLY
INSTALLED

GAP
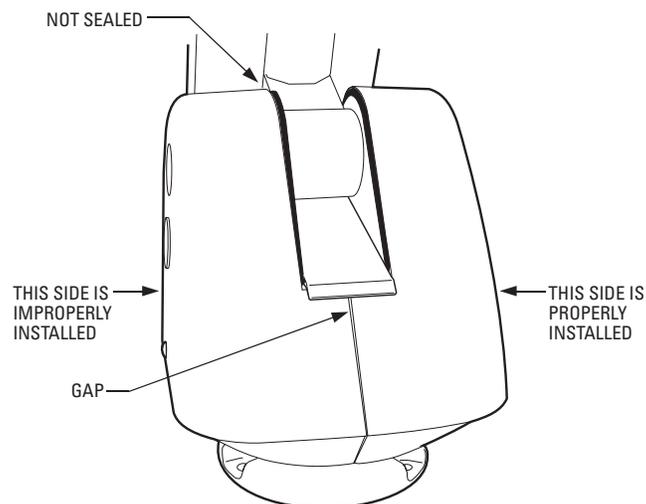
To reinstall the pan and tilt cover, do the following:

1. Properly position the cover and slide it into place. The sides of the cover must fit under the front and back rain guards of the pan and tilt, and the top of the cover must seat against the lip of the top gasket.

2. Apply pressure and push the top of the cover down to align the fastener holes.

3. Insert the Phillips head screw and tighten. Tighten until the screw will not turn.

TOP GASKET

FRONT
RAIN
GUARD
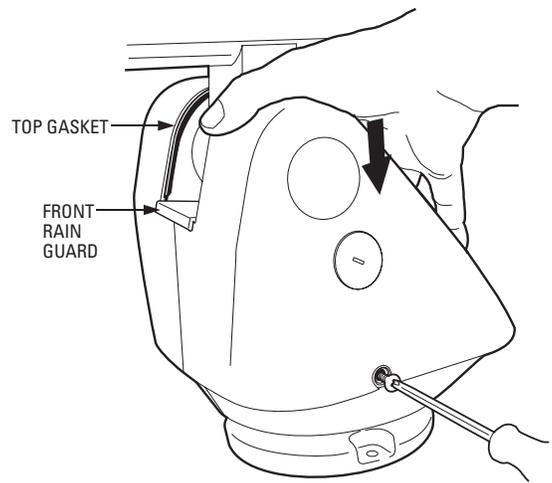
Operation

POWER-UP DISPLAY

When the system is powered up, the selected protocol, revision number, and other information is displayed on the monitor. For example, the screen might show the following information:

```
ESPRIT 16X IOC 2.00
CONFIGURE DONE

D Address 1
P Address 2
Comm 2400, N, 8, 1

CAMERA xxxx - xxxx
```

The information displayed depends on the selected protocol (C, D, or P) and the menu selection for power-up mode. (Refer to the *Power-up Mode* in the *Programming* section).

The information remains on the monitor until the system is moved.

HOW TO OPERATE YOUR SYSTEM

Operation	How to Control
Pan and Tilt	Move joystick left/right and up/down.
Scanning Stop scan Random scan Frame scan Auto scan	Call preset 96. Call preset 97. Call preset 98. Call preset 99.
Zoom Far	To zoom far, do the following: 1. Press the Zoom Tele button or turn the joystick clockwise until zoom stops at the **optical zoom[1] limit.** 2. Release the button or joystick. 3. To continuing zooming (digitally), immediately press the button or turn the joystick clockwise again until you have the picture you want or reach the **digital zoom[2] limit.**
Zoom Wide	Press the Zoom Wide button or turn the joystick counterclockwise.
Presets	Refer to the documentation supplied with the controller.
Patterns	Refer to the documentation supplied with the controller.

[1] Optical zoom magnifies the image and the picture remains clear. Resolution is constant.
[2] Digital zoom magnifies the image and the picture may appear pixilated. The larger the digital zoom limit the greater the reduction in resolution.

OPERATING NOTES

ENVIRONMENTAL RANGE

The operating temperature ranges from a minimum of -50°F (-45°C) to a maximum of 122°F (50°C) for sustained system operation or 140°F (60°C) absolute maximum. The entire unit can de-ice and be operational in two hours from a temperature of -13°F (-25°C). The thermostatically controlled heater consumes 10 watts and cycles on at 61°F (16°C) and off at 81°F (27°C), while the window defroster runs continuously and consumes 2.5 watts.

PRESSURIZED INTEGRATED OPTICS CARTRIDGE

The pressurized IOC houses an auto focus camera, lens, heater, and sensors in a self-contained, sealed unit. Dry nitrogen pressurized to 10 psig controls the environment inside the cartridge, eliminating internal condensation and corrosion.

Sensors strategically placed inside the pressurized IOC continually monitor pressure, temperature, and relative humidity. If internal conditions reach unacceptable levels, an alert label appears on the screen describing the alert condition. Example: If pressure drops below 1 psig, LOW PRESSURE is displayed on the monitor.

The following conditions will trigger an alert:

CONDITION	ALERT LABEL
1 psig	Low Pressure
25 psig	High Pressure
-40°C	Low Temperature
60°C	High Temperature
20%	High Relative Humidity

ALERT LABEL CYCLE

The Esprit system continually checks internal environmental conditions every 60 seconds. An ALERT label appears on the monitor if conditions are beyond manufacturer set acceptable limits. The label will be repeatedly displayed until acknowledged by the system controller. Once acknowledged, alert behavior changes to the programmed acknowledge action. If the alert condition remains unacceptable after a period of time, the ALERT label will reappear on the monitor, restarting the alert label cycle. The cycle will continue until the alert condition is resolved.
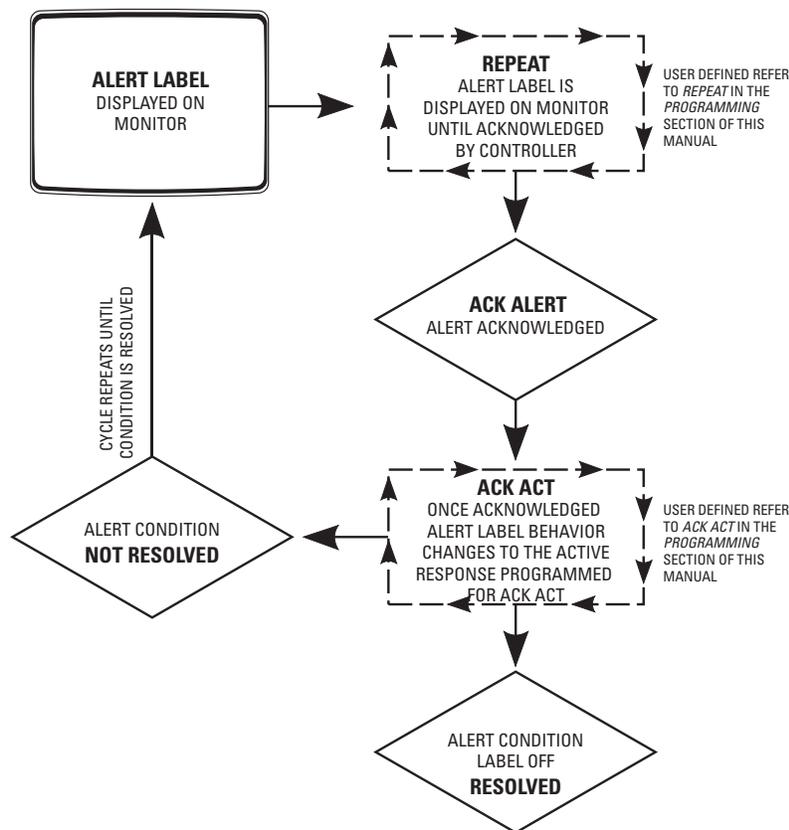
ALERT RESET

The Alert Reset function clears alert conditions and removes the ALERT label. The system will automatically check internal environmental conditions 60 seconds after reset. If conditions remain beyond manufacturer set acceptable limits, the ALERT label will reappear on the screen indicating further corrective action is required.

CURRENT READING MENU

```
              IOC Internal  Reading

Temperature        37 C
                   98 F
Dewpoint           08 C
                   46 F
Pressure        10.30 psig
                 0.71 bar

Refresh
Exit
```

The Current Reading menu displays the existing status of temperature, pressure, and dewpoint inside the integrated optics cartridge. An asterisk displayed to the left of a menu item denotes that an alert condition exists.

Due to the heat emitted from the electronics of the camera, normal temperature operating range is approximately 95°F.

PAN AND TILT FUNCTIONS

Controller Type	Pan (Capability: 360° Continuous Pan Rotation)**	Tilt (Viewing Range: +33° to -83°)***
Fixed speed	Speed determined by controller	Speed determined by controller
Variable speed* Turbo Mode* Preset Mode*	0.1 to 40° per second, depending on joystick and zoom positions 100° per second 100° per second	0.1 to 20° per second, depending on joystick and zoom positions Does not affect the tilt speed 30° per second

   *50 mph wind speed profile.
  **If manual limit stops are set, "Pan Limit" appears on your monitor when a limit stop is reached (except when you are programming or running a pattern). This does not apply to scan limit stops.
 ***When the system reaches the upper limit, "Tilt Limit" appears on your monitor (except when you are programming or running a pattern).

If the proportional pan mode is enabled (refer to Proportional Pan in the Programming section), the pan and tilt speeds will depend on the amount of zoom. At telephoto zoom settings, the pan and tilt speeds will be slower for a given amount of joystick deflection than at wide zoom settings. This keeps the image from moving too fast on the monitor when there is a large amount of zoom. This slowing does not happen when going to a preset, but does occur in turbo mode when high zoom is selected. The minimum pan and tilt speeds are 0.1 degree per second at full zoom.

SCAN SPEED

Scan speed is adjustable from 1 to 40 degrees per second through the programming menu.

PRESET FUNCTIONS

The Esprit system is capable of going to 64 preset locations, each with a 20-character label. The presets are numbered 1-32 and 35-66. Refer to the documentation for your control system for programming presets.

If you command the pan and tilt to go to an undefined preset, erratic operation may result.

Presets 33 and 34 are fixed commands, meaning that you cannot program them. Preset 33 is the "flip" command, which will pan the system 180 degrees. Preset 34 is the "pan zero" command, which will pan the system to the factory-determined zero reference point.

RANDOM, FRAME, AND AUTO SCANNING

Select preset 97 (30) to start random scanning. Select preset 98 (31) to activate frame scanning (three seconds of scanning followed by a three-second pause). Select preset 99 (32) to start auto (continuous) scanning. Scan limit stops are controlled by software. Refer to the *Limit Stops* section to program the scan limit stops.

When the pan and tilt reaches a scan limit stop, it reverses direction. Select preset 96 (29) to stop a scan. Any pan and tilt or lens command will also stop a scan.

ZONES

A zone is a programmed pan area with set boundaries and identifying label. The Esprit system has a maximum of eight zones, each with a 20-character label. Zones can be programmed to blank video when the camera pans into the zone area. If a zone is blanked, the system displays the message, VIDEO BLANK. (Refer to *Zone Blank* in the *Programming* section for instructions.)

PATTERNS

The Esprit system can do either one full pattern (1.5, 3, or 6 minutes long) or two half patterns (.75, 1.5, or 3 minutes long). This pattern can consist of any standard pan and tilt or lens command. Presets, flip, digital zoom, proportional pan, and turbo are not allowed in a pattern. Zones can be enabled while running a pattern. Refer to the documentation for your control system to program and run patterns.

PARK

If the system does not receive any commands for a specified period of time (refer to the *Park Time Minutes* section), the system goes to preset 1 and parks. If the time specified is zero, or if preset 1 has not been programmed, the pan and tilt will not park.

IR FILTER (MODELS ES30PCBW24 AND ES31PCBW24 ONLY)

The ES30PCBW24 and ES31PCBW24 models have an IR (infrared) lens filter that can switch in and out, automatically or manually, depending on how the system is programmed. When the filter is IN, the camera produces a color picture. When the IR filter switches OUT, the picture changes to black and white, increasing visibility in low light conditions.

The Auto IR Level setting controls automatic operation of the filter. To manually override automatic operation use presets 88 (filter IN) and 89 (filter OUT). The unit will remain in manual control until it is panned or tilted more than 15 degrees.

LOW LIGHT does not mean NO LIGHT. Some type of illumination is required (street light, IR light, etc.).

AUTO IRIS

If auto iris is in the auto mode, it remains that way until you manually open or close the iris. The system will return to auto iris when it is panned or tilted more than 15 degrees.

WIPER

The ES31PC Series features a window wiper to clear moisture from the enclosure glass. There are two modes of operation for the wiper: momentary and continuous. The wiper mode is easily set up through on-screen programming (refer to the *Wiper Mode* section).

To operate the wiper do the following:

- **Momentary Mode:** To operate the wiper one full cycle, press the AUX 1 button on your controller. Each press of the button operates the wiper one full cycle, even if the AUX 1 button is latching. If AUX 1 is latching, the first press will activate the wiper (open the latch). Pressing AUX 1 a second time closes the latch, but will not cycle the wiper. Press the AUX 1 key again to cycle the wiper.
- **Continuous Mode:** To operate the wiper press the AUX 1 button on your controller. The wiper will continue to operate until the AUX 1 button is pressed again or until the programmed cycle is completed.

NOTE: CM9740 and CM9760 Matrix Systems Only – For the wiper to operate in continuous mode, the AUX 1 function in the camera file must be set to latching. If the AUX 1 camera file is not latching, the wiper will only operate in momentary mode, even if the Esprit wiper is programmed for continuous operation. Refer to the operation manual supplied with the CM9740 or CM9760 matrix system for instructions.

OPEN COLLECTOR AUXILIARY OUTPUT

An AUX 2 command from the controller will activate a device, such as a relay. The output will remain active for two seconds and then deactivate, even if the controller is set to latching mode.

Examples of devices that can be used with AUX 2 are a washer assembly (not supplied by Pelco) or a latching relay (not supplied by Pelco) attached to control a gate, lights, etc.

If a relay is used it must require less than 32 VDC and 40 mA to trigger the relay coil. The relay must be placed within 100 ft (30 m) of the Esprit unit.

Programming – ES30PC16/ES31PC16

1. Access main menu (preset 95).
2. Make main menu selections.
   Joystick: Move up or down to position cursor or to toggle between selections.
   Iris Open: Enter.
   Iris Close: Cancel.

MAIN MENU

```
<Camera>
<Line Sync>
<Power Up>
*<Wiper>
<Limit Stop>
<Alert>
<Other>
ACK Alert
Exit
```

PRESETS

The following presets are reserved for special functions.

Preset	Function
1	Park
33	Flip command
34	Pan zero command
90-91	Manual limit stops
92-93	Auto limit stops
95	Select camera programming menu
96	Stop a scan
97	Random scanning
98	Frame scanning
99	Auto scanning

*ES31PC only

NOTE: For American Dynamics controllers with only 32 presets, set switch SW1-5 on the Esprit system to the ON position. When SW1-5 is ON, preset

```
99 becomes 32
98 becomes 31
97 becomes 30
96 becomes 29
95 becomes 28
94 becomes 27
93 becomes 26
92 becomes 25
91 becomes 24
90 becomes 23
89 becomes 22
88 becomes 21
```

If the limit stops are turned off (refer to the *Limit Stops* section), presets 23-26 can be used as regular presets.

Camera Menu

```
Backlight comp          Off
Zoom limit              x- -
Reset camera
<Gain/AGC>
<Auto iris>
Next
Exit
```

Line Sync Menu

```
Line Sync               On
Line Sync Phase         0
Exit
```

Power-Up Menu

```
Power Up            Default
Exit
```

*Wiper Menu

```
Wiper Mode        Momentary
Wiper Dwell <s>          2
Wiper Time <m>          60
Exit
```

Limit Stop Menu

```
Limit Stops             Off
Set Man Limits
Clear Man Limits
Set Scan Limits
Clear Scan Limits
Exit
```

Alert Menu

```
Repeat             Constant
Disp Pos          Top Right
ACK Act          Always On
<Current Reading>
Alert Reset
Exit
```

Other Menu

```
Proportional pan         On
Park time minutes         0
Scan Speed deg/s         25
Pattern Length      1.5 min
Spd Profile    50 MPH Wind
<Zone Blank>
<Az/El/Direction>
Exit
```

For detailed instructions, refer to the following sections.

Menu items are listed alphabetically.

Gain/AGC Menu

```
Gain Limit              27
Exit
```

Auto Iris Menu

```
Auto-iris mode        Auto
Auto-iris level         66
Auto-iris peak           8
Exit
```

Next Menu

```
Shutter speed         Auto
Auto focus mode       Auto
<Sharpness>
<White balance>
Prev
Exit
```

IOC Internal Reading

```
Temperature           37 C
                      98 F
Dewpoint              08 C
                      46 F
Pressure        10.30 psig
                 0.71 bar
Refresh
Exit
```

Sharpness Menu

```
Auto Sharpness          On
Sharpness              - -
Exit
```

White Balance Menu

```
Auto white bal          On
R-Gain                 182
B-Gain                 182
Exit
```

Zone Blank Menu

```
Video Blank Zone     1 Off
                     2 Off
                     3 Off
                     4 Off
                     5 Off
                     6 Off
                     7 Off
                     8 Off
Exit
```

Az/El/Direction

```
Set Azimuth Zero         0
Az/El                 Left
Az/El Line              10
Direction            Right
Direction Line          10
Zoom               Center
Zoom Line               10
Disp Duration            2
Exit
```

Programming – ES30PC22/ES31PC22

1. Access main menu (preset 95).
2. Make main menu selections.
   - Joystick: Move up or down to position cursor or to toggle between selections.
   - Iris Open: Enter.
   - Iris Close: Cancel.

MAIN MENU

```
<Camera>
<Line Sync>
<Power Up>
*<Wiper>
<Limit Stop>
<Alert>
<Other>
ACK Alert
Exit
```

PRESETS

The following presets are reserved for special functions.

Preset	Function
1	Park
33	Flip command
34	Pan zero command
90-91	Manual limit stops
92-93	Auto limit stops
95	Select camera programming menu
96	Stop a scan
97	Random scanning
98	Frame scanning
99	Auto scanning

*ES31PC only

NOTE: For American Dynamics controllers with only 32 presets, set switch SW1-5 on the Esprit system to the ON position. When SW1-5 is ON, preset

```
99 becomes 32
98 becomes 31
97 becomes 30
96 becomes 29
95 becomes 28
94 becomes 27
93 becomes 26
92 becomes 25
91 becomes 24
90 becomes 23
89 becomes 22
88 becomes 21
```

If the limit stops are turned off (refer to the *Limit Stops* section), presets 23-26 can be used as regular presets.

Camera Menu

```
Backlight comp        Off
Zoom limit            x- -
Reset camera
<Gain/AGC>
<Auto iris>
Next
Exit
```

Line Sync Menu

```
Line Sync             On
Line Sync Phase       0
Exit
```

Power-Up Menu

```
Power Up         Default
Exit
```

*Wiper Menu

```
Wiper Mode      Momentary
Wiper Dwell <s>         2
Wiper Time <m>         60
Exit
```

Limit Stop Menu

```
Limit Stops          Off
Set Man Limits
Clear Man Limits
Set Scan Limits
Clear Scan Limits
Exit
```

Alert Menu

```
Repeat          Constant
Disp Pos       Top Right
ACK Act       Always On
<Current Reading>
Alert Reset
Exit
```

Other Menu

```
Proportional pan       On
Park time minutes       0
Scan Speed deg/s       25
Pattern Length     1.5 min
Spd Profile    50 MPH Wind
<Zone Blank>
<Az/El/Direction>
Exit
```

Gain/AGC Menu

```
Gain Limit              7
Exit
```

Auto Iris Menu

```
Auto-iris mode       Auto
Auto-iris level        66
Auto-iris peak         16
Exit
```

Next Menu

```
LowLight limit          2
Shutter speed        Auto
Auto focus mode      Auto
<Sharpness>
<White balance>
Prev
Exit
```

IOC Internal Reading

```
Temperature          37 C
                     98 F
Dewpoint             08 C
                     46 F
Pressure       10.30 psig
                0.71 bar
Refresh
Exit
```

Sharpness Menu

```
Auto Sharpness         On
Sharpness              13
Exit
```

White Balance Menu

```
Auto white bal         On
R-Gain                182
B-Gain                182
Exit
```

Zone Blank Menu

```
Video Blank Zone    1 Off
                    2 Off
                    3 Off
                    4 Off
                    5 Off
                    6 Off
                    7 Off
                    8 Off
Exit
```

Az/El/Direction

```
Set Azimuth Zero        0
Az/El                Left
Az/El Line             10
Direction           Right
Direction Line         10
Zoom              Center
Zoom Line              10
Disp Duration           2
Exit
```

For detailed instructions, refer to the following sections.

Menu items are listed alphabetically.

Programming – ES30PCBW24/ES31PCBW24

1. Access main menu (preset 95).
2. Make main menu selections.
   - Joystick: Move up or down to position cursor or to toggle between selections.
   - Iris Open: Enter.
   - Iris Close: Cancel.

MAIN MENU

```
<Camera>
<Line Sync>
<Power Up>
*<Wiper>
<Limit Stop>
<Alert>
<Other>
ACK Alert
Exit
```

PRESETS

The following presets are reserved for special functions.

Preset	Function
1	Park
33	Flip command
34	Pan zero command
90-91	Manual limit stops
92-93	Auto limit stops
95	Select camera programming menu
96	Stop a scan
97	Random scanning
98	Frame scanning
99	Auto scanning

*ES31PC only

NOTE: For American Dynamics controllers with only 32 presets, set switch SW1-5 on the Esprit system to the ON position. When SW1-5 is ON, preset

```
99 becomes 32
98 becomes 31
97 becomes 30
96 becomes 29
95 becomes 28
94 becomes 27
93 becomes 26
92 becomes 25
91 becomes 24
90 becomes 23
89 becomes 22
88 becomes 21
```

If the limit stops are turned off (refer to the *Limit Stops* section), presets 23-26 can be used as regular presets.

Camera Menu

```
Backlight comp          Off
Zoom limit              x72
Reset camera
<Gain/AGC>
<Auto iris>
Next
Exit
```

Line Sync Menu

```
Line Sync               On
Line Sync Phase          0
Exit
```
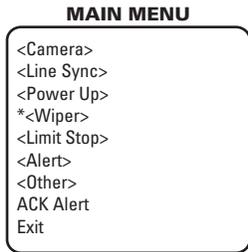
Power-Up Menu

```
Power Up            Default
Exit
```

*Wiper Menu

```
Wiper Mode       Momentary
Wiper Dwell <s>          2
Wiper Time <m>         60
Exit
```

Limit Stop Menu

```
Limit Stops             Off
Set Man Limits
Clear Man Limits
Set Scan Limits
Clear Scan Limits
Exit
```

Alert Menu

```
Repeat             Constant
Disp Pos          Top Right
ACK Act          Always On
<Current Reading>
Alert Reset
Exit
```

Other Menu

```
Proportional pan         On
Park time minutes         0
Scan Speed deg/s         25
Pattern Length     1.5 min
Spd Profile   50 MPH Wind
<Zone Blank>
<Az/El/Direction>
Exit
```

Gain/AGC Menu

```
Gain Limit               28
Exit
```

Auto Iris Menu

```
Auto-iris mode        Auto
Auto-iris level          91
Auto-iris peak           16
Exit
```

Next Menu

```
LowLight limit            2
Shutter speed         Auto
Auto focus mode       Auto
<IR Filter>
<Sharpness>
<White balance>
Prev
Exit
```

IOC Internal Reading

```
Temperature            37 C
                       98 F
Dewpoint               08 C
                       46 F
Pressure         10.30 psig
                  0.71 bar
Refresh
Exit
```

IR Filter Menu

```
IR Filter mode         Auto
Auto IR Level         Dusk
Exit
```

Sharpness Menu

```
Auto Sharpness
Sharpness                On
Exit
```

White Balance Menu

```
Auto white bal           On
R-Gain                  182
B-Gain                  182
Exit
```

Zone Blank Menu

```
Video Blank Zone      1 Off
                      2 Off
                      3 Off
                      4 Off
                      5 Off
                      6 Off
                      7 Off
                      8 Off
Exit
```

Az/El/Direction

```
Set Azimuth Zero          0
Az/El                   Left
Az/El Line               10
Direction             Right
Direction Line           10
Zoom                 Center
Zoom Line                10
Disp Duration             2
Exit
```

For detailed instructions, refer to the following sections.

Menu items are listed alphabetically.

Programming

ACCESSING MAIN MENU (PRESET 95)

You can call up the main menu on your monitor by programming (setting or creating) preset 95 (28 if in 32-preset mode).

Programming preset 95 for Pelco's controllers varies according to the type of controller you are using. Instructions for programming preset 95 are given below for various Pelco controllers.

CM6700

1. Enter the number of the camera and press the CAM key.

2. Enter 95 and hold the PRESET key for two seconds.

3. In the Edit Preset menu, arrow to SET and press the ACK key. The main menu appears.

KBD200/KBD300A (Direct Mode Only)

1. Enter 95.

2. Hold the PRESET key (approximately 5 seconds) until the main menu appears on the screen.
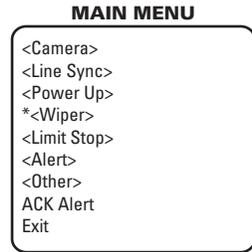
CM8500

1. Enter the number of the camera and press the CAM key.

2. Highlight PRESET in the Camera menu and hold down the joystick button until the Set Presets prompt appears.

3. Enter 95 and press the PRESET key. The text editor appears. Select ENTER and the main menu appears.

CM9500

1. Enter the number of the camera and press the CAM key. The Main menu appears.

2. Highlight SETUP in the Main menu and press the SELECT key.

3. Highlight CAM in the Setup menu and press the SELECT key.

4. Highlight PRESET in the Camera menu and press the SELECT key.

5. Enter 95 and press the F1 key. The main menu appears.

CM9750

1. Turn the KEY SWITCH to the ON position.

2. Press the PROG key. PROGRAM appears on the LCD display.

3. Press the PRES key. The PRESET prompt appears.

4. Enter 95 and press the ENTER key. The main menu appears.

5. Turn the KEY SWITCH to the OFF position.

CM9740/CM9760/CM9770/CM9780

1. Press the ESCAPE key to open the Main menu. Select DEF. The Define Menu appears.

2. Enter your four-digit PIN if this is your first time entering this mode.

3. Enter 95 and select PRST. The main menu appears on the monitor.

4. Select the Quit icon to return to the default menu.

KBD4000/KBD4002/KBD4000V

1. Press the SPOT MONITOR key.

2. Enter 95, and then hold the PRESET key (approximately five seconds) until the main menu appears on the screen.

MPT9500

Standard Coaxitron Mode

1. Enter 95 and press the PRESET SET key.

2. Position the asterisk in the YES row and press the F1 key. The main menu appears.

Extended Coaxitron or RS-485 Mode

1. Enter 95 and press the PRESET SET key.

2. Press the F2 key. The main menu appears.

Endura Systems

If your Esprit positioning system is connected to an Endura™ system, you can access the main menu directly from the WS5050 Endura Workstation or the VCD5000. Note that access to the main menu is controlled through user permissions.

WS5050

1. Right-click in the video pane that is displaying video from an Esprit positioning system.

2. Click Preset, and then click Select Preset.

3. Enter 95, and then click OK.

VCD5000

1. Select a video pane that is displaying video from an Esprit positioning system.

2. Enter 95 on the KBD5000 keyboard. A shortcuts menu appears.

3. Press the Preset button on the keyboard.

ACK ACT (ACKNOWLEDGE ACTION)

```
      MAIN MENU                  Alert Menu
 ┌─────────────────┐      ┌─────────────────────┐
 │ <Camera>        │      │ Repeat      Constant│
 │ <Line Sync>     │      │ Disp Pos   Top Right│
 │ <Power Up>      │      │ ACK Act    Always On│
 │ <Wiper>         │ ───▶ │ <Currrent Reading>  │
 │ <Limit Stop>    │      │ Alert Reset         │
 │ <Alert>         │      │ Exit                │
 │ <Other>         │      │                     │
 │ ACK Alert       │      │                     │
 │ Exit            │      │                     │
 └─────────────────┘      └─────────────────────┘
```
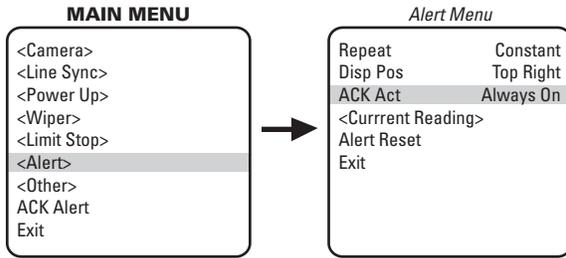
If an enivronmental condition inside of the IOC goes outside of the factory set limits (such as "Low Pressure") then select ACK Alert to activate the alert label behavior. Program ACK Act to establish alert label behavior after alert acknowledgement. The following acknowledge actions are available:

- **Always on:** The alert label is displayed until alert conditions are clear.
- **Off 8 hrs:** The alert label is turned off for 8 hours. Label returns after 8 hours if the alert condition persists.
- **Off 24 hrs:** The alert label is turned off for 24 hours. Label returns after 24 hours if the alert condition persists.
- **Off 48 hrs:** The alert label is turned off for 48 hours. Label returns after 48 hours if the alert condition persists.

To set the acknowledge action:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Alert.

3. Press the Iris Open button to enter the Alert menu.

4. Position the cursor (>) beside ACK Act.

5. Press the Iris Open button. The cursor moves to the right.

6. Move the joystick up or down to make a selection.

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

ALERT DISPLAY POSITION

MAIN MENU

```
<Camera>
<Line Sync>
<Power Up>
<Wiper>
<Limit Stop>
<Alert>
<Other>
ACK Alert
Exit
```

Alert Menu

```
Repeat              Constant
Disp Pos            Top Right
ACK Act             Always On
<Currrent Reading>
Alert Reset
Exit
```
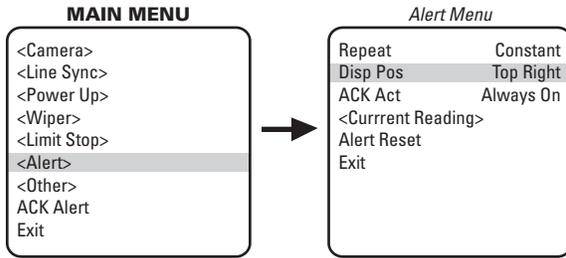
Screen positioning of the alert label is user-defined. Positioning options include the following:

```
Top Left              Top Right



           Center



Bottom Left      Bottom Right
```

To set the alert label position:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Alert.

3. Press the Iris Open button to enter the Alert menu.

4. Position the cursor (>) beside Disp Pos.

5. Press the Iris Open button. The cursor moves to the right.

6. Move the joystick up or down to make a selection.

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

    CANCEL: Press the Iris Close button if you do not want to change the setting.

ALERT REPEAT

MAIN MENU

```
<Camera>
<Line Sync>
<Power Up>
<Wiper>
<Limit Stop>
<Alert>
<Other>
ACK Alert
Exit
```

Alert Menu

```
Repeat          Constant
Disp Pos        Top Right
ACK Act         Always On
<Currrent Reading>
Alert Reset
Exit
```

You can program how often an ALERT label is repeatedly displayed until it is acknowledged by the system controller. The following settings are available:

- **Constant:** The ALERT label is continually displayed on the monitor until acknowledged.
- **15 min off:** The ALERT label is displayed every 15 minutes for a 15-second duration until acknowledged.
- **30 min off:** The ALERT label is displayed every 30 minutes for a 15-second duration until acknowledged.
- **60 min off:** The ALERT label is displayed every 60 minutes for a 15-second duration until acknowledged.

To program the alert repeat setting:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Alert.

3. Press the Iris Open button to enter the Alert menu.

4. Position the cursor (>) beside Repeat.

5. Press the Iris Open button. The cursor moves to the right.

6. Move the joystick up or down to select the repeat setting.

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

AUTO FOCUS MODE

```
        MAIN MENU                    Camera Menu                     Next Menu

 <Camera>                     Backlight comp      Off        LowLight limit
 <Line Sync>                  Zoom limit          x- -       Shutter speed       Auto
 <Power Up>                   Reset camera                   Auto focus mode     Auto
 <Wiper>                      <Gain/AGC>                     <Sharpness>
 <Limit Stop>         ──▶     <Auto iris>          ──▶       <White balance>
 <Alert>                      Next                           Prev
 <Other>                      Exit                           Exit
 ACK Alert
 Exit
```

There are two auto focus modes:

- **Auto:** If auto focus is in the auto mode, pressing the Focus Far or Focus Near button will place the focus in the manual mode. The system will return to auto focus if you pan or tilt the unit or do a zoom function.

- **Off:** If the mode is set to off, the dome will operate in the manual mode with one exception. If you issue a command to go to a preset, auto focus will turn on and remain on until you press the Focus Far or Focus Near button.
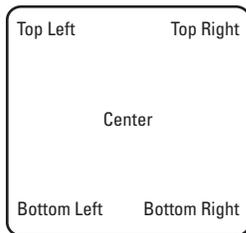
To change the mode:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Next.

5. Press the Iris Open button to go to the next camera menu.

6. Position the cursor (>) beside Auto Focus Mode.

7. Press the Iris Open button. The cursor moves to the right, beside the word Auto or Off.

8. Move the joystick up or down to toggle between Auto and Off.

9. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

AUTO IRIS

```
       MAIN MENU              Camera Menu                   Auto Iris Menu
┌─────────────────────┐  ┌─────────────────────────┐  ┌─────────────────────────┐
│ <Camera>            │  │ Backlight comp     Off  │  │ Auto-iris mode    Auto  │
│ <Line Sync>         │  │ Zoom limit         x- - │  │ Auto-iris level         │
│ <Power Up>          │  │ Reset camera            │  │ Auto-iris peak          │
│ <Wiper>       ──────┼─▶│ <Gain/AGC>              │  │ Exit                    │
│ <Limit Stop>        │  │ <Auto iris>       ──────┼─▶│                         │
│ <Alert>             │  │ Next                    │  │                         │
│ <Other>             │  │ Exit                    │  │                         │
│ ACK Alert           │  │                         │  │                         │
│ Exit                │  │                         │  │                         │
└─────────────────────┘  └─────────────────────────┘  └─────────────────────────┘
```
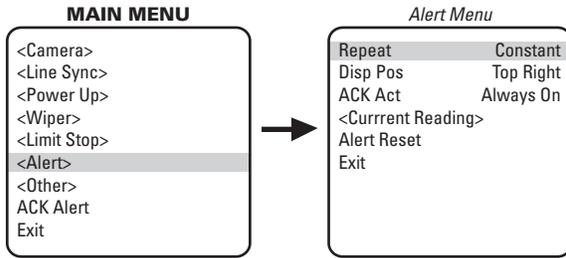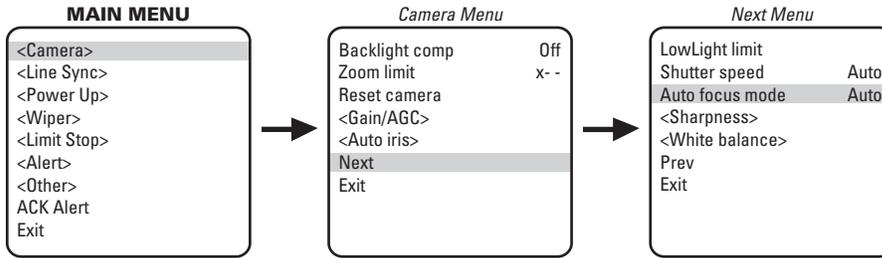
The following are the settings for auto iris: Mode, Level, and Peak.

To change the settings for auto iris:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Auto Iris.

5. Press the Iris Open button. The Auto Iris menu appears.

6. Position the cursor (>) and select one of the following settings:

   MODE: The cursor moves to one of two choices:

   Auto: The iris is automatically adjusted to produce a constant video output as determined by the Level setting.

   Off: Auto iris is disabled, and control is always manual.

   Move the joystick up or down to toggle between Auto and Off. Press the Iris Open button to select the choice, or press the Iris Close button if you do not want to change the setting.

   LEVEL: The cursor moves to a numeric value, which the system uses to try to maintain a certain light level. Changing the value of the Level setting will change the video level to which the auto iris adjusts. This setting should be adjusted if the video level in the auto iris mode is too bright or too dark. Move the joystick up or down to a value. Press the Iris Open button to select the value, or press the Iris Close button if you do not want to change the setting.

   PEAK: The cursor moves to a numeric value. Increasing this value will cause the auto iris circuit to react more to highlights or "peaks" in the picture. Decreasing this value will cause it to use the average video level to adjust the iris. Move the joystick up or down to a value. Press the Iris Open button to select the value, or press the Iris Close button if you do not want to change the setting.

AUTO IR LEVEL (MODELS ES30PCBW24/ES31PCBW24)

MAIN MENU		*Camera Menu*		*Next Menu*		*IR Filter Menu*	
<Camera>		Backlight comp	Off	LowLight limit	Auto	IR filter mode	Auto
<Line Sync>		Zoom limit	x- -	Shutter speed	Auto	Auto IR Level	Dusk
<Power Up>		Reset camera		Auto focus mode	Auto	Exit	
<Wiper>		<Gain/AGC>		<IR Filter>			
<Limit Stop>		<Auto iris>		<Sharpness>			
<Alert>		Next		<White balance>			
<Other>		Exit		Prev			
ACK Alert				Exit			
Exit							
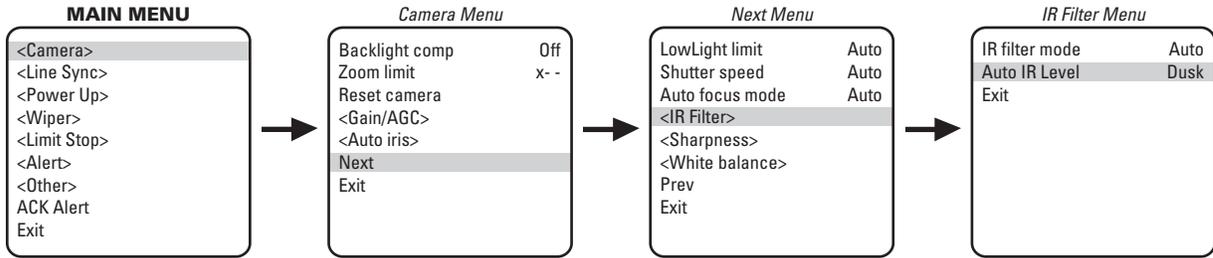
The auto IR level is the light level at which the infrared filter switches IN or OUT. Following are the available settings for the Auto IR Level:

- **DUSK (default):** Approximately 6 lux (black-white), approximately 13 lux (color)
- **DARK:** Approximately 0.1 lux (black-white), approximately 2 lux (color)

NOTES:

- If backlight compensation is ON and the IR cut filter switches OUT in normal lighting conditions, adjust the Auto IR Level to a darker setting. Refer to the Backlight Compensation section.

- ***LOW LIGHT does not mean NO LIGHT. Some type of illumination is required (street light, IR light, etc.).*** The camera is not sensitive to IR light when the IR cut filter is IN.

To change the auto IR level settings:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Next.

5. Press the Iris Open button to enter the Next menu.

6. Position the cursor (>) beside IR Filter.

7. Press the Iris Open button to enter the IR Filter menu.

8. Position the cursor (>) beside Auto IR Level.

9. Press the Iris Open button. The cursor moves to the right.

10. Move the joystick up or down to toggle between the level settings.

11. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

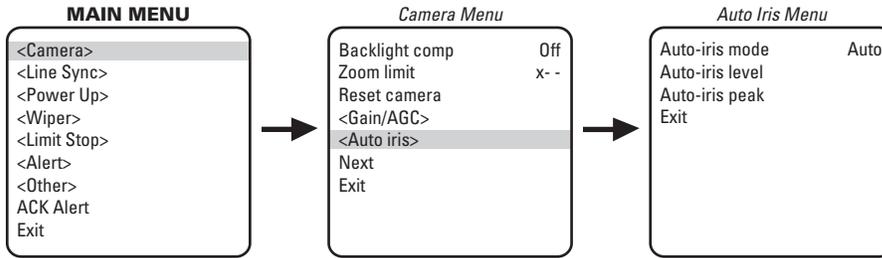   **CANCEL:** Press the Iris Close button if you do not want to change the setting.

AUTO SHARPNESS

MAIN MENU	Camera Menu	Next Menu	Sharpness Menu
<Camera>	Backlight comp Off	LowLight limit Auto	Auto Sharpness On
<Line Sync>	Zoom limit x- -	Shutter speed Auto	Sharpness 13
<Power Up>	Reset camera	Auto focus mode Auto	Exit
<Wiper>	<Gain/AGC>	<Sharpness>	
<Limit Stop>	<Auto iris>	<White balance>	
<Alert>	Next	Prev	
<Other>	Exit	Exit	
ACK Alert			
Exit			
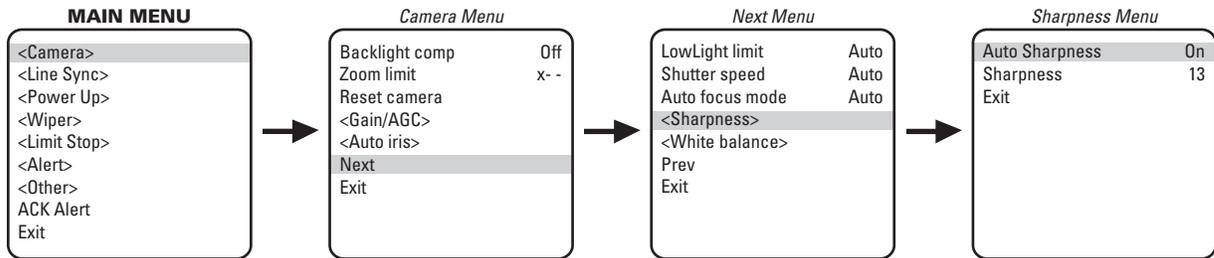
The following settings are available for auto sharpness:

- **On:** Automatically sets the sharpness of the camera.
- **Off:** The sharpness of the camera needs to be manually set (refer to Sharpness).

To change the mode:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Next. Press the Iris Open button to go to the next camera menu.

5. Position the cursor (>) beside Sharpness. Press the Iris Open button.

6. Position the cursor (>) beside Auto Sharpness. Press the Iris Open button the cursor moves to the right.

7. Move the joystick up or down to toggle between On and Off.

8. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

AZ/EL

```
       MAIN MENU                    Other Menu                    Az/El/Direction
┌─────────────────────┐   ┌─────────────────────────┐   ┌─────────────────────────┐
│ <Camera>            │   │ Proportional pan    On  │   │ Set Azimuth Zero        │
│ <Line Sync>         │   │ Park time minutes    0  │   │ Az/El                   │
│ <Power Up>          │   │ Scan Speed deg/s    25  │   │ Az/El Line              │
│ <Wiper>          ──►│   │ Pattern Length  1.5 min │──►│ Direction               │
│ <Limit Stop>        │   │ Spd Profile             │   │ Direction Line          │
│ <Alert>             │   │ <Zone Blank>            │   │ Zoom                    │
│ <Other>             │   │ <Az/El/Direction>       │   │ Zoom Line               │
│ ACK Alert           │   │ Exit                    │   │ Disp Duration           │
│ Exit                │   │                         │   │ Exit                    │
└─────────────────────┘   └─────────────────────────┘   └─────────────────────────┘
```
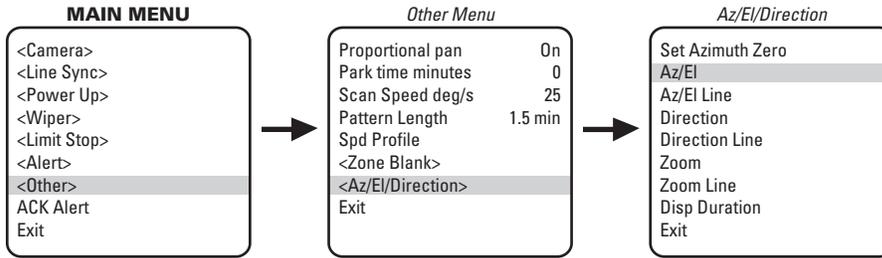
Az/El programs the horizontal display position of the Azimuth[1]/Elevation[2] label.

NOTE: Az/El display is not available while you are programming or running a pattern.

The following settings are available for the Az/El label:

- **Off:** Label is not displayed.
- **Left (default):** Label is displayed on the left-hand side of the screen.
- **Center:** Label is displayed in the center of the screen.
- **Right:** Label is displayed on the right-hand side of the screen.

To program the horizontal label position for Az/El:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Az/El/Direction.

5. Press the Iris Open button to enter the Az/El/Direction menu.

6. Position the cursor (>) beside Az/El.

7. Press the Iris Open button. The cursor moves to the right.

8. Move the joystick up or down to view the available selections.

9. **SELECT:** Press the Iris Open button to make a selection.

   CANCEL: Press the Iris Close button to cancel selection.

[1] Azimuth is the pan angle from 0° to 359°.

[2] Elevation is the tilt position from 33° to -83°.

AZ/EL LINE

```
      MAIN MENU                Other Menu                   Az/El/Direction
  ┌──────────────────┐    ┌──────────────────────┐    ┌──────────────────────┐
  │ <Camera>         │    │ Proportional pan  On │    │ Set Azimuth Zero     │
  │ <Line Sync>      │    │ Park time minutes  0 │    │ Az/El                │
  │ <Power Up>       │    │ Scan Speed deg/s  25 │    │ Az/El Line           │
  │ <Wiper>          │ ▶  │ Pattern Length 1.5min│ ▶  │ Direction            │
  │ <Limit Stop>     │    │ Spd Profile          │    │ Direction Line       │
  │ <Alert>          │    │ <Zone Blank>         │    │ Zoom                 │
  │ <Other>          │    │ <Az/El/Direction>    │    │ Zoom Line            │
  │ ACK Alert        │    │ Exit                 │    │ Disp Duration        │
  │ Exit             │    │                      │    │ Exit                 │
  └──────────────────┘    └──────────────────────┘    └──────────────────────┘
```
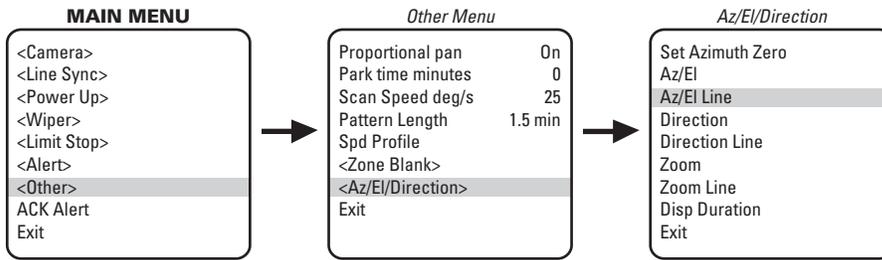
Az/El Line controls the vertical display position of the Azimuth/Elevation label. The label may be displayed on lines 3 through 10. Line 3 is the third line from the top of the screen and line 10 is located at the bottom of the screen. Line 10 is the default setting.

NOTE: Az/El display is not available while you are programming or running a pattern.

To program the vertical label position for Az/El:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Az/El/Direction.

5. Press the Iris Open button to enter the Az/El/Direction menu.

6. Position the cursor (>) beside Az/El Line.

7. Press the Iris Open button. The cursor moves to the right.

8. Move the joystick up or down to view the available selections.

9. **SELECT:** Press the Iris Open button to make a selection.

   CANCEL: Press the Iris Close button to cancel a selection.

AZIMUTH ZERO

MAIN MENU	*Other Menu*	*Az/El/Direction*
<Camera>	Proportional pan On	Set Azimuth Zero
<Line Sync>	Park time minutes 0	Az/El
<Power Up>	Scan Speed deg/s 25	Az/El Line
<Wiper>	Pattern Length 1.5 min	Direction
<Limit Stop>	Spd Profile	Direction Line
<Alert>	<Zone Blank>	Zoom
<Other>	<Az/El/Direction>	Zoom Line
ACK Alert	Exit	Disp Duration
Exit		Exit
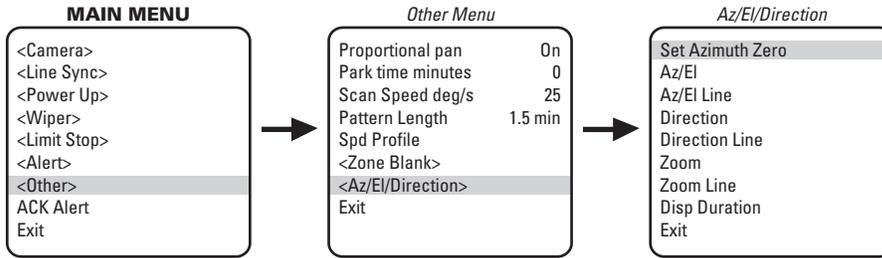
Azimuth is the pan angle from 0 to 359 degrees. Azimuth zero is the programmed zero-degree point that is normally set to magnetic north. Once programmed, on-screen pan position (azimuth) and compass readings are based on the set azimuth zero point.

To set azimuth zero:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Az/El/Direction.

5. Press the Iris Open button to enter the Az/El/Direction menu.

6. Position the cursor (>) beside Set Azimuth Zero.

7. Press the Iris Open button. The programming menu for Set Azimuth Zero appears on the monitor.

8. Use the joystick to pan the Esprit unit to the desired azimuth zero (0° point) position.

9. Press the Iris Open button to set the azimuth zero position.

BACKLIGHT COMPENSATION

MAIN MENU		*Camera Menu*	
<Camera>		Backlight comp	Off
<Line Sync>		Zoom limit	x- -
<Power Up>		Reset camera	
<Wiper>		<Gain/AGC>	
<Limit Stop>		<Auto iris>	
<Alert>		Next	
<Other>		Exit	
ACK Alert			
Exit			
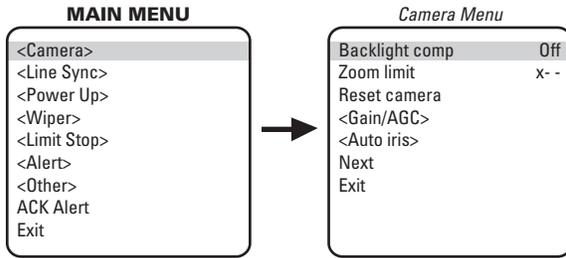
There are two backlight compensation modes:

- **On:** The system uses the center 10 percent of the picture to adjust the iris. If there is a bright light source outside of this area, it will wash out to white. The camera will adjust the iris so that the object in the sensitive area is properly exposed.

NOTE: ES30PCBW24/ES31PCBW24 Only – If backlight compensation is ON and the IR cut filter switches OUT (black and white mode) in normal lighting conditions, adjust the Auto IR Level to a darker setting. Refer to the Auto IR Level section.

- **Off:** Backlight compensation is not activated.

To change the backlight compensation mode:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Backlight Comp.

5. Press the Iris Open button. The cursor moves to the right, beside the word On or Off.

6. Move the joystick up or down to toggle between On and Off.

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

NON-SENSITIVE AREA

SENSITIVE AREA

DIRECTION

MAIN MENU	*Other Menu*	*Az/El/Direction*
<Camera>	Proportional pan　　On	Set Azimuth Zero
<Line Sync>	Park time minutes　　0	Az/El
<Power Up>	Scan Speed deg/s　　25	Az/El Line
<Wiper>	Pattern Length　1.5 min	Direction
<Limit Stop>	Spd Profile	Direction Line
<Alert>	<Zone Blank>	Zoom
<Other>	<Az/El/Direction>	Zoom Line
ACK Alert	Exit	Disp Duration
Exit		Exit
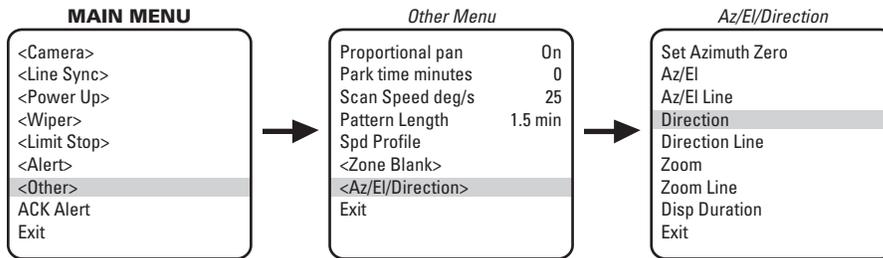
Direction programs the horizontal display position of the Direction label (N, NW, NE, …).

NOTES:

- For direction to be accurate, azimuth zero must be set to magnetic north.

- Direction display is not available while you are programming or running a pattern.

The following settings are available for the Direction label:

- **Off:** Label is not displayed.
- **Left:** Label is displayed on the left-hand side of the screen.
- **Center:** Label is displayed in the center of the screen.
- **Right (default):** Label is displayed on the right-hand side of the screen.

To program the horizontal label position for direction:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Az/El/Direction.

5. Press the Iris Open button to enter the Az/El/Direction menu.

6. Position the cursor (>) beside Direction.

7. Press the Iris Open button. The cursor moves to the right.

8. Move the joystick up or down to view the available selections.

9. **SELECT:** Press the Iris Open button to make a selection.

   CANCEL: Press the Iris Close button to cancel a selection.

DIRECTION LINE

```
        MAIN MENU                    Other Menu                   Az/El/Direction
  ┌─────────────────────┐    ┌─────────────────────────┐    ┌──────────────────────┐
  │ <Camera>            │    │ Proportional pan     On │    │ Set Azimuth Zero     │
  │ <Line Sync>         │    │ Park time minutes     0 │    │ Az/El                │
  │ <Power Up>          │    │ Scan Speed deg/s     25 │    │ Az/El Line           │
  │ <Wiper>             │    │ Pattern Length   1.5 min│    │ Direction            │
  │ <Limit Stop>        │ ▶  │ Spd Profile             │ ▶  │ Direction Line       │
  │ <Alert>             │    │ <Zone Blank>            │    │ Zoom                 │
  │ <Other>             │    │ <Az/El/Direction>       │    │ Zoom Line            │
  │ ACK Alert           │    │ Exit                    │    │ Disp Duration        │
  │ Exit                │    │                         │    │ Exit                 │
  └─────────────────────┘    └─────────────────────────┘    └──────────────────────┘
```
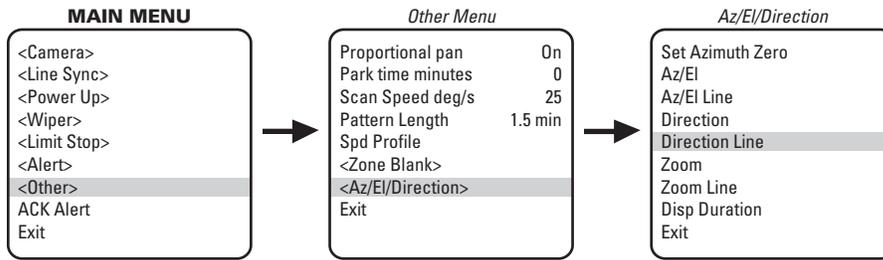
Direction Line controls the vertical display position of the Direction label. The label may be displayed on lines 3 through 10. Line 3 is the third line from the top of the screen and line 10 is located at the bottom of the screen. Line 10 is the default setting.

NOTE: Direction display is not available while you are programming or running a pattern.

To program the vertical label position for direction:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Az/El/Direction.

5. Press the Iris Open button to enter the Az/El/Direction menu.

6. Position the cursor (>) beside Direction Line.

7. Press the Iris Open button. The cursor moves to the right.

8. Move the joystick up or down to view the available selections.

9. **SELECT:** Press the Iris Open button to make a selection.

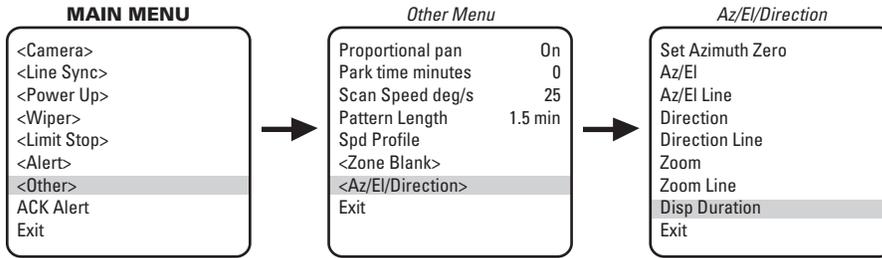   **CANCEL:** Press the Iris Close button to cancel selection.

DISPLAY DURATION

MAIN MENU	Other Menu	Az/El/Direction
<Camera> <Line Sync> <Power Up> <Wiper> <Limit Stop> <Alert> <Other> ACK Alert Exit	Proportional pan On Park time minutes 0 Scan Speed deg/s 25 Pattern Length 1.5 min Spd Profile <Zone Blank> <Az/El/Direction> Exit	Set Azimuth Zero Az/El Az/El Line Direction Direction Line Zoom Zoom Line Disp Duration Exit

Display Duration programs the duration the Az/El, Direction, and Zoom labels are displayed on the monitor. The available settings for display duration include the following:

- **Constant:** The label is displayed continuously.
- **2 Seconds (default):** The label is displayed for 2 seconds after PTZ functions end.
- **5 Seconds:** The label is displayed for 5 seconds after PTZ functions end.
- **10 Seconds:** The label is displayed for 10 seconds after PTZ functions end.

To program the display duration for the Az/El, Direction, and Zoom labels:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Az/El/Direction.

5. Press the Iris Open button to enter the Az/El/Direction menu.

6. Position the cursor (>) beside Disp Duration.

7. Press the Iris Open button. The cursor moves to the right.

8. Move the joystick up or down to view the available selections.

9. **SELECT:** Press the Iris Open button to make a selection.

   CANCEL: Press the Iris Close button to cancel selection.

GAIN/AGC

```
        MAIN MENU                  Camera Menu                    Gain/AGC Menu

  <Camera>                  Backlight comp      Off          Gain Limit        27
  <Line Sync>               Zoom limit          x- -         Exit
  <Power Up>                Reset camera
  <Wiper>            ▶      <Gain/AGC>      ▶
  <Limit Stop>              <Auto iris>
  <Alert>                   Next
  <Other>                   Exit
  ACK Alert
  Exit
```
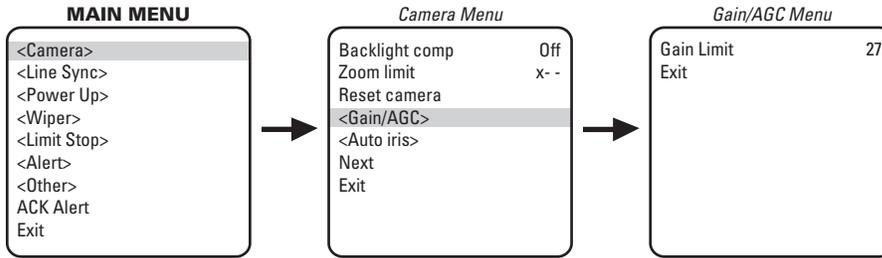
GAIN LIMIT

The gain limit sets the maximum level for the automatic gain control. Increasing the level will increase the signal level and increase the noise level of the picture.

To change the gain:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Gain/AGC.

5. Press the Iris Open button to enter the Gain/AGC menu.

6. Position the cursor (>) beside Gain Limit.

7. Press the Iris Open button. The cursor moves to the right, beside the current gain level setting (a numeric value).

8. Move the joystick up or down to change the level.

9. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

IR FILTER MODE (MODELS ES30PCBW24/ES31PCBW24)

MAIN MENU

```
<Camera>
<Line Sync>
<Power Up>
<Wiper>
<Limit Stop>
<Alert>
<Other>
ACK Alert
Exit
```

Camera Menu

```
Backlight comp      Off
Zoom limit          x- -
Reset camera
<Gain/AGC>
<Auto iris>
Next
Exit
```

Next Menu

```
LowLight limit      Auto
Shutter speed       Auto
Auto focus mode     Auto
<IR Filter>
<Sharpness>
<White balance>
Prev
Exit
```

IR Filter Menu

```
IR filter mode      Auto
Auto IR Level       Dusk
Exit
```
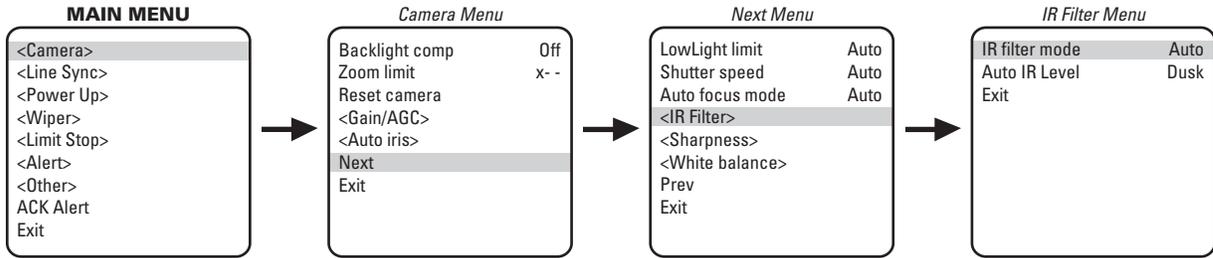
There are two settings for the IR filter mode:

IMPORTANT: Automatic shutter speed must be set to Auto for the IR filter to operate automatically. If the automatic shutter speed is disabled, the IR filter setting will automatically switch to OFF.

- **Auto:** IR filter switches in and out automatically.

NOTE: (ES30PCBW24/ES31PCBW24) If the IR Filter Mode is set to Auto, the Shutter Speed setting will default automatically to Auto setting.

- **Off:** IR filter is manually operated. The following presets are used to manually operate the IR filter.

  Preset 88: Filter IN (color)

  Preset 89: Filter OUT (monochrome)

To change the IR filter mode:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Next.

5. Press the Iris Open button to enter the Next menu.

6. Position the cursor (>) beside IR Filter.

7. Press the Iris Open button to enter the IR Filter menu.

8. Position the cursor (>) beside IR Filter mode.

9. Press the Iris Open button. The cursor moves to the right, beside the word Auto or Off.

10. Move the joystick up or down to toggle between Auto and Off.

11. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

    CANCEL: Press the Iris Close button if you do not want to change the setting.

LIMIT STOPS

```
        MAIN MENU                    Limit Stop Menu

   <Camera>                     Limit Stops          Off
   <Line Sync>                  Set Man Limits
   <Power Up>                   Clear Man Limits
   <Wiper>                      Set Scan Limits
   <Limit Stop>        ──▶      Clear Scan Limits
   <Alert>                      Exit
   <Other>
   ACK Alert
   Exit
```
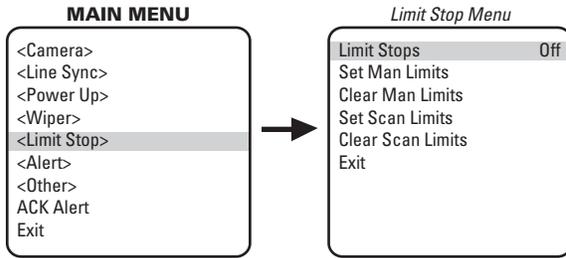
NOTE: Limit stops are inactive while setting items in the program menu (e.g. azimuth zero, scan limits, manual pan limits).

TURNING LIMIT STOPS ON OR OFF

To change the limit stop mode:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Limit Stop.

3. Press the Iris Open button to enter the Limit Stop menu.

4. Position the cursor (>) beside Limit Stops.

5. Press the Iris Open button. The cursor moves to the right, beside the word On or Off.

6. Move the joystick up or down to toggle between On and Off.

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

PROGRAMMING LIMIT STOPS

Manual Limit Stops

When manual limit stops are set, a (joystick/pan and tilt keys) pan operation stops when a limit stop is reached. The manual limit stops can be set in one of two ways:

- At the controller by programming presets 90 (23) and 91 (24).
- At the controller by programming the Limit Stops menu.

Presets

Refer to the documentation for your control system for programming presets, and then do the following:

1. Make sure limit stops are turned ON, then exit the menu.

2. Push the joystick left until you reach the limit you want the camera to go to on the left.

3. Program preset 90 (23).

4. Push the joystick right to the limit you want the camera to go to on the right.

5. Program preset 91 (24).

Setting presets 90 (23) and 91 (24) to the same point disables manual limit stops.

NOTE: Programming preset 90 (23) disables the manual limit stops until preset 91 (24) is set. Preset 90 (23) is the left manual limit and preset 91 (24) is the right manual limit.

Limit Stops Menu

The manual pan limit stops can be set at the controller using the Limit Stops menu:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Limit Stop.

3. Press the Iris Open button to enter the Limit Stop menu.

4. Move the cursor to Set Man Limits and press the Iris Open button. PRESS IRIS OPEN TO SET LEFT LIMIT appears.

5. Move the pan and tilt to the desired left limit position and press the Iris Open button to set the left manual limit. PRESS IRIS OPEN TO SET RIGHT LIMIT appears.

6. Move the pan and tilt to the desired right limit position and press the Iris Open button to set the right manual limit.

7. Exit the Limit Stop menu.

Clear Manual Stops

To clear the manual limit stops:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Limit Stop.

3. Press the Iris Open button to enter the Limit Stop menu.

4. Move the cursor to Clear Man Limits and press the Iris Open button. The cursor will flash to an asterisk (*) briefly to indicate the limits have been disabled.

Scan Limit Stops

When scan limit stops are set, the pan and tilt reverses direction during random, frame, or auto scanning when a limit stop is reached.
The manual scan limit stops can be set in one of two ways:
- At the controller by programming presets 92 and 93.
- At the controller by programming the Limit Stops menu.

Presets

Refer to the documentation for your control system for programming presets, and then do the following:

1. Make sure limit stops are turned ON, then exit the menu.

2. Push the joystick left until you reach the limit you want the camera to go to on the left.

3. Program preset 92 (25).

4. Push the joystick right to the limit you want the camera to go to on the right.

5. Program preset 93 (26).

Setting presets 92 (25) and 93 (26) to the same point disables manual limit stops.

NOTE: Programming preset 92 (25) disables the scan limit stops until preset 93 (26) is set. Preset 92 is the left scan limit and preset 93 is the right scan limit.

Limit Stops Menu

The manual pan limit stops can be set at the controller using the Limit Stops menu:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Limit Stop.

3. Press the Iris Open button to enter the Limit Stop menu.

4. Move the cursor to Set Scan Limits and press the Iris Open button. PRESS IRIS OPEN TO SET LEFT LIMIT appears.

5. Move the pan and tilt to the desired left limit position and press the Iris Open button to set the left manual limit. PRESS IRIS OPEN TO SET RIGHT LIMIT appears.

6. Move the pan and tilt to the desired right limit position and press the Iris Open button to set the right scan limit.

7. Exit the Limit Stop menu.

Clear Scan Limit Stops
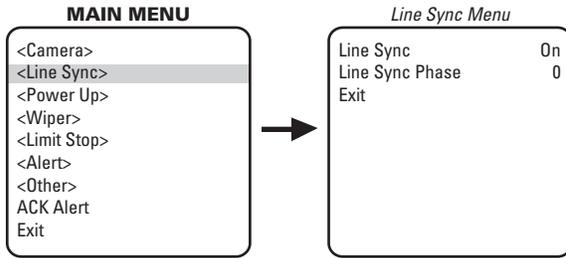
To clear the scan limit stops:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Limit Stop.

3. Press the Iris Open button to enter the Limit Stop menu.

4. Move the cursor to Clear Scan Limits and press the Iris Open button. The cursor will flash to an asterisk (*) briefly to indicate the limits have been disabled.

LINE SYNCHRONIZATION

```
       MAIN MENU                    Line Sync Menu

<Camera>                    Line Sync              On
<Line Sync>                 Line Sync Phase         0
<Power Up>                  Exit
<Wiper>
<Limit Stop>        →
<Alert>
<Other>
ACK Alert
Exit
```

If cameras are out of phase with each other, they may produce what appears to be vertical roll when switching between cameras.

There are two settings for line synchronization:

- **On:** Adjust the synchronization of the power line voltage so that it is in phase with other cameras.
- **Off:** The system synchronizes to an internal clock.

To change the line synchronization settings:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Line Sync.

3. Press the Iris Open button. The Line Sync menu appears.

4. Position the cursor (>) beside one of the choices. Press the Iris Open button.

   LINE SYNC: The cursor moves to one of two choices: On or Off. Move the joystick up or down to toggle between them. Press the Iris Open button to select the choice. If you changed to Off, the camera may reset itself as it adjusts to the new synchronization. If the camera resets, it will only affect the line synchronization. It will not change any other camera parameters, such as auto focus or auto iris. Press the Iris Close button if you do not want to change the setting.

   LINE SYNC PHASE: The cursor moves to a numeric value. Move the joystick up or down to change the value. The value represents the phase angle in tenths of a degree between 0 and 359 degrees. For example, 900 is 90 degrees, 1200 is 120 degrees, and 2400 is 240 degrees. Press the Iris Open button on your keyboard to select your choice. The Line Sync setting changes to On. The camera may reset or the picture on your monitor may wiggle when you change the phase angle. If the camera resets, it will only affect the line synchronization. It will not change any other camera parameters, such as auto focus or auto iris. Press the Iris Close button if you do not want to change the setting.

LOWLIGHT LIMIT (MODELS ES30PC22/ES31PC22 AND ES30PCBW24/ES31PCBW24 ONLY)

```
        MAIN MENU                    Camera Menu                      Next Menu
┌──────────────────────┐      ┌──────────────────────┐      ┌──────────────────────┐
│ <Camera>             │      │ Backlight comp    Off │      │ LowLight limit       │
│ <Line Sync>          │      │ Zoom limit        x- - │      │ Shutter speed    Auto │
│ <Power Up>           │  ──▶ │ Reset camera          │  ──▶ │ Auto focus mode  Auto │
│ <Wiper>              │      │ <Gain/AGC>            │      │ <Sharpness>          │
│ <Limit Stop>         │      │ <Auto iris>           │      │ <White balance>      │
│ <Alert>              │      │ Next                  │      │ Prev                 │
│ <Other>              │      │ Exit                  │      │ Exit                 │
│ ACK Alert            │      │                       │      │                      │
│ Exit                 │      │                       │      │                      │
└──────────────────────┘      └──────────────────────┘      └──────────────────────┘
```
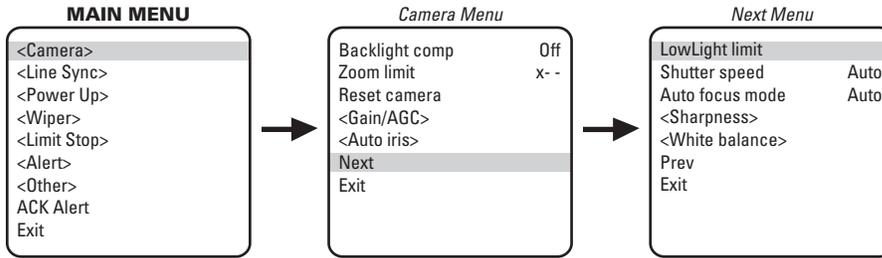
This setting determines the maximum length of time the shutter will remain open automatically in low light conditions. There are six choices:

2 (1/2 second)	8 (1/8 second)	30 (1/30 second)
4 (1/4 second)	15 (1/15 second)	60 (1/60 second)

NOTES:

- **LOWLIGHT does not mean NO LIGHT.** Some type of illumination is required.

- Auto focus is automatically turned off when the shutter speed is longer than 1/8 of a second.

To change the LowLight setting:

1. On the main menu, move the joystick up or down to position the cursor (>) beside Camera.

2. Press the Iris Open button to enter the Camera menu.

3. Position the cursor (>) beside Next.

4. Press the Iris Open button to go to the Next (camera) menu.

5. Position the cursor (>) beside LowLight Limit.

6. Press the Iris Open button. The cursor moves to the right, beside the current LowLight Limit.

7. Move the joystick up or down to choose the LowLight Limit.

8. **SELECT:** Press the Iris Open button to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

PARK TIME MINUTES

MAIN MENU

```
<Camera>
<Line Sync>
<Power Up>
<Wiper>
<Limit Stop>
<Alert>
<Other>
ACK Alert
Exit
```

Other Menu

```
Proportional pan        On
Park time minutes        0
Scan Speed deg/s        25
Pattern Length      1.5 min
Spd Profile     90 MPH wind
Exit
```
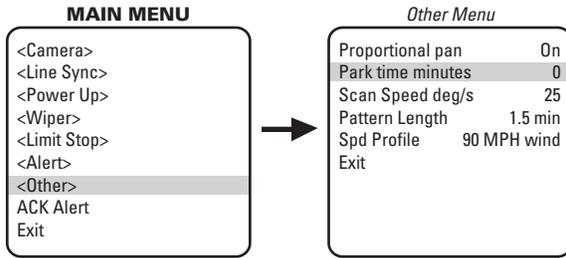
This feature causes the system to park at preset 1 after a programmed number of minutes of control inactivity. The time can be set from 1 minute to 720 minutes (12 hours), or it can be set to zero, which disables this feature.

NOTE: Preset 1 must be programmed for the system to park.

To change the park time:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Park Time Minutes.

5. Press the Iris Open button. The cursor moves to the right, beside the current park time.

6. Move the joystick up or down to change the park time.

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

PATTERN LENGTH

```
         MAIN MENU                    Other Menu
┌─────────────────────┐      ┌─────────────────────────┐
│ <Camera>            │      │ Proportional pan     On │
│ <Line Sync>         │      │ Park time minutes     0 │
│ <Power Up>          │  →   │ Scan Speed deg/s     25 │
│ <Wiper>             │      │ Pattern Length    1.5 min│
│ <Limit Stop>        │      │ Spd Profile  90 MPH wind│
│ <Alert>             │      │ Exit                    │
│ <Other>             │      │                         │
│ ACK Alert           │      │                         │
│ Exit                │      │                         │
└─────────────────────┘      └─────────────────────────┘
```
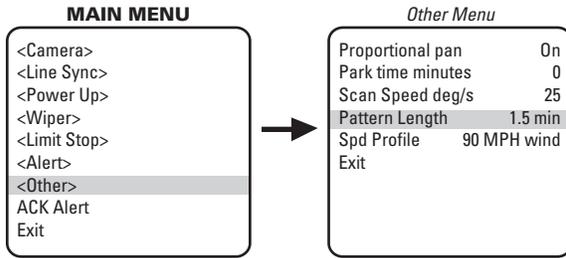
The Esprit can do the following:

- One full pattern that is 1.5, 3, or 6 minutes long.
- Two half patterns that is .75, 1.5, or 3 minutes long.

This pattern can consist of any standard pan and tilt or lens command. Presets, flip, and turbo are not allowed in a pattern. Zone scan can be enabled while running a pattern.

NOTE: Digital zoom and proportional pan are not available during a pattern.

To set the pattern length:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the menu entitled Other.

4. Position the cursor (>) beside Pattern Length.

5. Press the Iris Open button. The cursor moves to the right, beside the number of minutes (1.5, 3, or 6).

6. Move the joystick up or down to toggle through the number of minutes (1.5, 3, or 6).

⚠ **CAUTION:** If the pattern length is changed, all patterns that were stored are erased.

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

POWER-UP MODE

```
        MAIN MENU                   Power-Up Menu
  ┌─────────────────────┐    ┌─────────────────────────┐
  │ <Camera>            │    │ Power Up        Default │
  │ <Line Sync>         │    │ Exit                    │
  │ <Power Up>          │    │                         │
  │ <Wiper>             │    │                         │
  │ <Limit Stop>        │──▶ │                         │
  │ <Alert>             │    │                         │
  │ <Other>             │    │                         │
  │ ACK Alert           │    │                         │
  │ Exit                │    │                         │
  └─────────────────────┘    └─────────────────────────┘
```

This feature lets the dome resume a desired condition following power-up. The menu includes the following choices.

- **Default:** On power-up, the system goes through a configuration cycle and stops at zero reference, showing "Configuration Done," address, and mode settings on the screen.
- **Park:** The system moves to preset 1 when the power-up sequence finishes. The only text on the screen is the preset label (if any is programmed).
- **Scan Auto:** The system initiates scan mode when the power-up sequence finishes. Again, there is no text.
- **Scan Frame:** The system initiates a frame scan when the power-up sequence finishes.
- **Scan Rand:** The system initiates a random scan when the power-up sequence finishes.
- **Full Pat:** The system initiates its programmed pattern when the power-up sequence finishes. The length can be set to 1.5, 3, or 6 minutes.
- **Half Pat 1:** The system initiates the first half-pattern when the power-up sequence finishes. The length can be set to .75, 1.5, or 3 minutes.
- **Half Pat 2:** The system initiates the second half-pattern when the power-up sequence finishes. The length can be set to .75, 1.5, or 3 minutes.
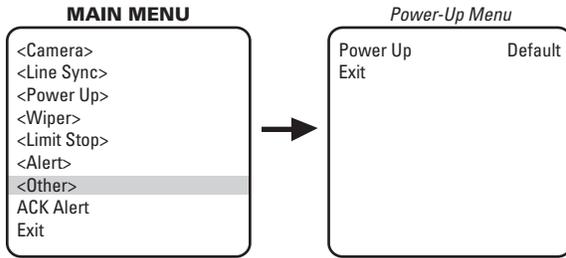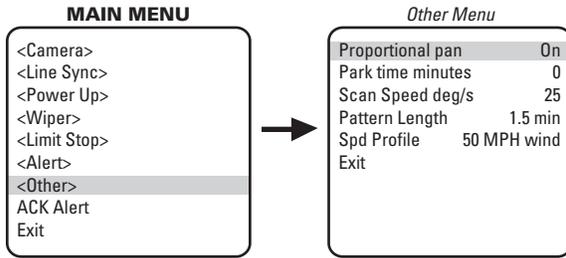
The default setting is Default.

To select the power-up mode:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Power Up.

3. Press the Iris Open button to enter the Power-Up menu.

4. Press the Iris Open button to move the cursor to the right.

5. Move the joystick up or down to cycle through the selections. Stop on the item you want to select.

6. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

PROPORTIONAL PAN

```
      MAIN MENU                    Other Menu
┌─────────────────────┐      ┌─────────────────────┐
│ <Camera>            │      │ Proportional pan  On│
│ <Line Sync>         │      │ Park time minutes   0│
│ <Power Up>          │      │ Scan Speed deg/s   25│
│ <Wiper>             │ ──►  │ Pattern Length 1.5 min│
│ <Limit Stop>        │      │ Spd Profile 50 MPH wind│
│ <Alert>             │      │ Exit                │
│ <Other>             │      │                     │
│ ACK Alert           │      │                     │
│ Exit                │      │                     │
└─────────────────────┘      └─────────────────────┘
```

There are two proportional pan modes:

- **On:** Enables the proportional pan mode. The amount of zoom controls the pan and tilt. At telephoto zoom settings, the pan and tilt speeds will be slower for a given amount of joystick deflection than at wide zoom settings. This keeps the image from moving too fast on the monitor when there is a large amount of zoom.

- **Off:** Disables proportional pan mode. The pan speed will not depend on the amount of zoom.

NOTE: Proportional pan is not available during a pattern.

To change the proportional pan mode:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Proportional Pan.

5. Press the Iris Open button. The cursor moves to the right, beside the word On or Off.

6. Move the joystick up or down to toggle between On and Off.

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

RESET CAMERA

```
        MAIN MENU                    Camera Menu
┌─────────────────────┐      ┌─────────────────────┐
│<Camera>             │      │ Backlight comp   Off │
│<Line Sync>          │      │ Zoom limit       x- -│
│<Power Up>           │      │ Reset camera         │
│<Wiper>              │ ──▶  │ <Gain/AGC>           │
│<Limit Stop>         │      │ <Auto iris>          │
│<Alert>              │      │ Next                 │
│<Other>              │      │ Exit                 │
│ACK Alert            │      │                      │
│Exit                 │      │                      │
└─────────────────────┘      └─────────────────────┘
```
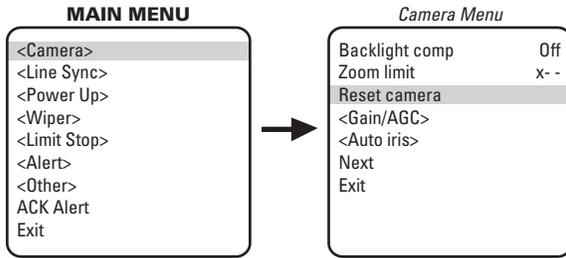
Resetting the camera returns the settings to their defaults.

		Models ES30PCBW24/ ES31PCBW24/		Models ES30PC22/ ES31PC22/	Models ES30PC16/ ES31PC16/	
Default Setting	**Backlight comp**	Off		Off	Off	
	Zoom Limit	No default		No default	No default	
	Gain/AGC **Gain Limit**	25		29	27	
	Auto iris **Mode** **Level** **Peak**	NTSC Auto 106 16	PAL Auto 96 16	Auto 66 16	NTSC Auto 66 8	PAL Auto 57 16
	Low light limit	2		2	N/A	
	Shutter speed	Auto		Auto	Auto	
	Auto focus mode	Auto		Auto	Auto	
	IR Filter **IR filter mode** **Auto IR level**	Auto Dusk		N/A N/A	N/A N/A	
	Sharpness **Auto sharpness** **Sharpness**	On No default		On No default	On No default	
	White balance **Auto white bal** **R Gain** **B Gain**	On No default No default		On No default No default	On No default No default	

Turning off power does not reset the camera. Camera settings are retained in memory. When the power is turned back on, the settings will be the same as they were when the power was turned off.

To reset the camera:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Reset Camera.

5. Press the Iris Open button to reset the camera.

SCAN SPEED

MAIN MENU

Other Menu

```
<Camera>
<Line Sync>
<Power Up>
<Wiper>
<Limit Stop>
<Alert>
<Other>
ACK Alert
Exit
```

```
Proportional pan          On
Park time minutes          0
Scan Speed deg/s          25
Pattern Length       1.5 min
Spd Profile    50 MPH wind
Exit
```
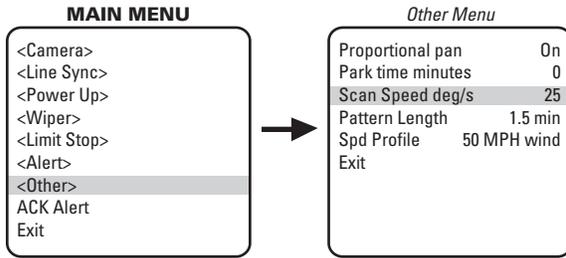
The scan speed is adjustable from 1-40 degrees per second. This occurs in three scan modes: auto, random, and frame scan.

To change the scan speed:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the menu entitled Other.

4. Position the cursor (>) beside Scan Speed deg/s.

5. Press the Iris Open button. The cursor moves to the right, beside the number of degrees.

6. Move the joystick up or down to toggle through the number of degrees (1-40) until you reach the number you want. (If set on a low number, the scan will appear to barely move but is still functioning.)

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

SHARPNESS

MAIN MENU	Camera Menu	Next Menu	Sharpness Menu
<Camera>	Backlight comp Off	LowLight limit Auto	Auto Sharpness On
<Line Sync>	Zoom limit x- -	Shutter speed Auto	Sharpness 13
<Power Up>	Reset camera	Auto focus mode Auto	Exit
<Wiper>	<Gain/AGC>	<Sharpness>	
<Limit Stop>	<Auto iris>	<White balance>	
<Alert>	Next	Prev	
<Other>	Exit	Exit	
ACK Alert			
Exit			
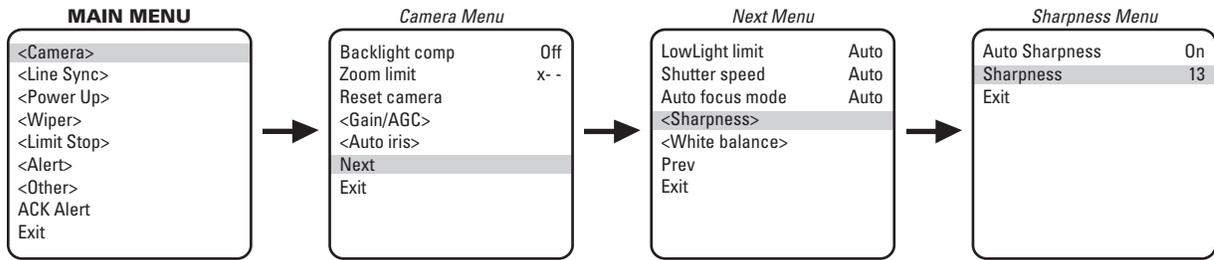
Use the Sharpness setting to manually set the sharpness of the camera.

To manually set the sharpness of the camera:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

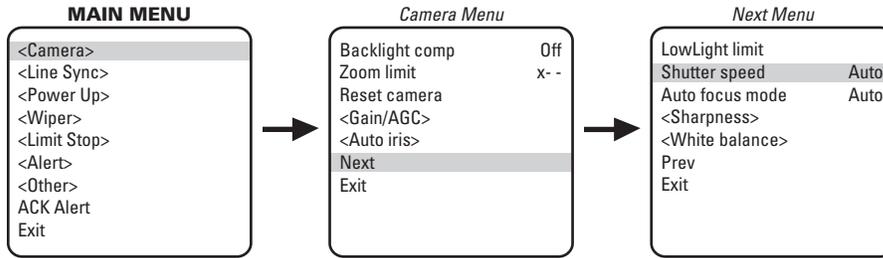4. Position the cursor (>) beside Next. Press the Iris Open button.

5. Position the cursor (>) beside Sharpness. Press the Iris Open button.

6. Position the cursor (>) beside Sharpness. Press the Iris Open button the cursor moves to the right, beside the numeric value.

7. Move the joystick up or down to a value. As you change the value, you will see the sharpness change. Press the Iris Open button to select the value, or press the Iris Close button if you do not want to change the setting. If the Auto Sharpness setting is On, it will change to Off when you select a Sharpness value.

SHUTTER SPEED

```
      MAIN MENU              Camera Menu                  Next Menu

  <Camera>              Backlight comp      Off      LowLight limit
  <Line Sync>           Zoom limit          x- -     Shutter speed        Auto
  <Power Up>            Reset camera                 Auto focus mode      Auto
  <Wiper>               <Gain/AGC>                   <Sharpness>
  <Limit Stop>          <Auto iris>                  <White balance>
  <Alert>               Next                         Prev
  <Other>               Exit                         Exit
  ACK Alert
  Exit
```

There are several electronic shutter speed settings:

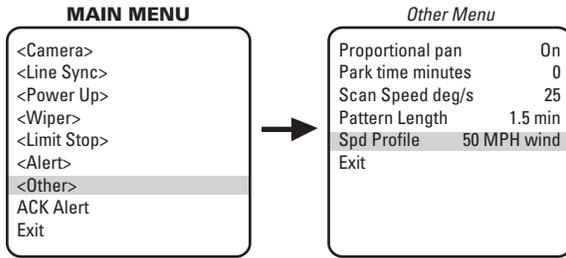| Auto	1/15	1/180	1/2000
1/2	1/30	1/250	1/4000
1/4	1/60	1/500	1/10,000
1/8	1/120	1/1000	1/30,000

In the Auto setting the camera controls the shutter speed automatically. Increasing the shutter speed lowers the light sensitivity, but rapidly moving objects will be less blurred.

NOTE: (ES30PCBW24/ES31PCBW24) If the IR Filter Mode is set to Auto, the Shutter Speed setting will default automatically to Auto setting.

To change the electronic shutter speed settings:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Next.

5. Press the Iris Open button to go to the Next menu.

6. Position the cursor (>) beside Shutter Speed.

7. Press the Iris Open button.

8. The cursor moves to the right, beside the current shutter speed.

9. Move the joystick up or down to choose the shutter speed.

10. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

    CANCEL: Press the Iris Close button if you do not want to change the setting.

SPEED PROFILE

```
        MAIN MENU                      Other Menu
  ┌─────────────────────┐      ┌─────────────────────┐
  │ <Camera>            │      │ Proportional pan  On │
  │ <Line Sync>         │      │ Park time minutes  0 │
  │ <Power Up>          │      │ Scan Speed deg/s  25 │
  │ <Wiper>             │  ──► │ Pattern Length 1.5 min│
  │ <Limit Stop>        │      │ Spd Profile  50 MPH wind│
  │ <Alert>             │      │ Exit                 │
  │ <Other>             │      │                      │
  │ ACK Alert           │      │                      │
  │ Exit                │      │                      │
  └─────────────────────┘      └─────────────────────┘
```
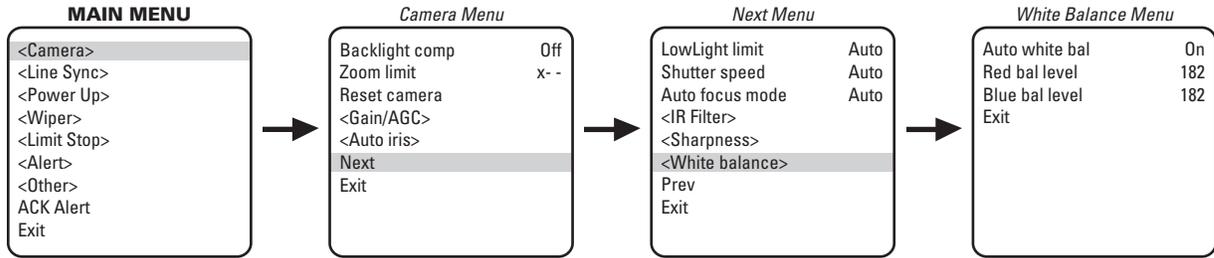
This feature allows the operator to set the wind speed conditions for the location of the Esprit system. You can set two wind speed profiles of 50 mph or 90 mph in which the system will remain operational. In both settings, the pan speed will be a maximum of 40 degrees per second. The difference will be in the turbo and preset pan speeds. The turbo and preset pan speeds are 100 degrees per second in the 50 mph wind profile setting and 50 degrees per second in the 90 mph profile.

To set the speed profile:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the menu entitled Other.

4. Position the cursor (>) beside Spd Profile.

5. Press the Iris Open button. The cursor moves to the right, beside the wind speed (50 mph wind or 90 mph wind).

6. Move the joystick up or down to toggle through the wind speeds (50 mph wind or 90 mph wind).

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

WHITE BALANCE

MAIN MENU

```
<Camera>
<Line Sync>
<Power Up>
<Wiper>
<Limit Stop>
<Alert>
<Other>
ACK Alert
Exit
```

Camera Menu

```
Backlight comp        Off
Zoom limit            x- -
Reset camera
<Gain/AGC>
<Auto iris>
Next
Exit
```

Next Menu

```
LowLight limit        Auto
Shutter speed         Auto
Auto focus mode       Auto
<IR Filter>
<Sharpness>
<White balance>
Prev
Exit
```

White Balance Menu

```
Auto white bal        On
Red bal level         182
Blue bal level        182
Exit
```
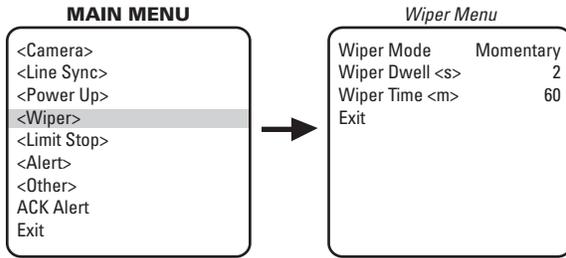
The settings for white balance are as follows:

- Auto white bal
- R Gain
- B Gain

To change the white balance settings:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Next.

5. Press the Iris Open button to go to the Next menu.

6. Position the cursor (>) beside White Balance.

7. Press the Iris Open button. The White Balance menu appears.

8. Position the cursor (>) beside one of the following choices and press the Iris Open button.

9. Move the joystick up or down to make a selection.

10. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

    CANCEL: Press the Iris Close button if you do not want to change the setting.

WIPER MODE

```
      MAIN MENU                    Wiper Menu

<Camera>                    Wiper Mode      Momentary
<Line Sync>                 Wiper Dwell <s>          2
<Power Up>                  Wiper Time <m>          60
<Wiper>                     Exit
<Limit Stop>          ➜
<Alert>
<Other>
ACK Alert
Exit
```

There are three wiper settings:

- Wiper Mode (Momentary or Continuous)
- Wiper Dwell
- Wiper Time

To change the wiper settings:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Wiper.

3. Press the Iris Open button to enter the Wiper menu.

4. Move the joystick up or down to position the cursor next to one of the wiper settings.

5. Press the Iris Open button. The cursor moves to the right.

6. Move the joystick up or down to toggle between through the choices.

7. SELECT: Press the Iris Open button on your keyboard to select your choice.

    CANCEL: Press the Iris Close button if you do not want to change the setting.

To operate the wiper feature do the following:

- **Momentary Mode:** To operate the wiper one full cycle, press the AUX 1 button on your controller. Each press of the button operates the wiper one full cycle, even if the AUX 1 button is latching. If AUX 1 is latching, the first press will activate the wiper (open the latch). Pressing AUX 1 a second time closes the latch, but will not cycle the wiper. Press the AUX 1 key again to cycle the wiper.
- **Continuous Mode:** To operate the wiper press the AUX 1 button on your controller. The wiper will continue to operate until the AUX 1 button is pressed again or until the programmed cycle is completed.

NOTE: CM9740 and CM9760 Matrix Systems Only – For the wiper to operate in continuous mode, the AUX 1 function in the camera file must be set to latching. If the AUX 1 camera file is not latching, the wiper will only operate in momentary mode, even if the Esprit wiper is programmed for continuous operation. Refer to the operation manual supplied with the CM9740 or CM9760 matrix system for instructions.
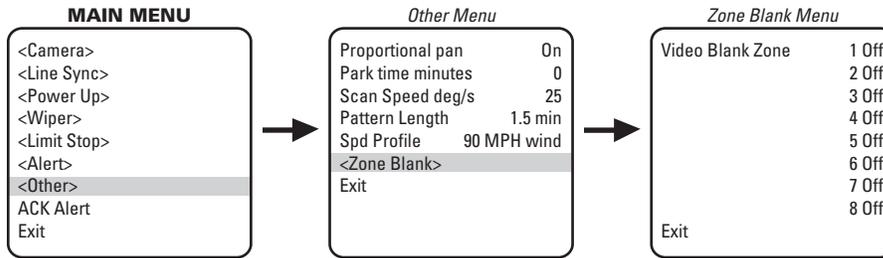
- **Wiper Dwell:** The time between wiper cycles. The dwell time can be programmed from 2 to 30 seconds.
- **Wiper Time:** The length of the wiper cycle. Wiper time can be programmed from 60 to 1,440 minutes (1 to 24 hours).

ZONES

Basic rules for setting zones:

1. Refer to the documentation for your control system to program zones.

2. Establish zones using the controller, prior to programming ZONE BLANK with the Esprit onscreen menu.

3. To accurately set zone areas, zoom wide to the maximum field of view.

4. Set zones moving the joystick left to right. The left position is always the start position.

ZONE BLANK

```
        MAIN MENU                    Other Menu                     Zone Blank Menu
 ┌─────────────────────┐    ┌─────────────────────┐    ┌─────────────────────┐
 │ <Camera>            │    │ Proportional pan  On│    │ Video Blank Zone  1 Off│
 │ <Line Sync>         │    │ Park time minutes  0│    │                   2 Off│
 │ <Power Up>          │ →  │ Scan Speed deg/s  25│ →  │                   3 Off│
 │ <Wiper>             │    │ Pattern Length 1.5 min│  │                   4 Off│
 │ <Limit Stop>        │    │ Spd Profile 90 MPH wind│ │                   5 Off│
 │ <Alert>             │    │ <Zone Blank>        │    │                   6 Off│
 │ <Other>             │    │ Exit                │    │                   7 Off│
 │ ACK Alert           │    │                     │    │                   8 Off│
 │ Exit                │    │                     │    │ Exit                │
 └─────────────────────┘    └─────────────────────┘    └─────────────────────┘
```

The Esprit system features on-screen programmable zone blanking. This feature lets you define any zone as blanked for video (viewing/recording).

Zones can be programmed to overlap each other, although this is not recommended. If you program two zones to overlap, the title of the zone with the highest priority (zone 8 is the highest, zone 1 is the lowest) will be displayed on the monitor. This rule also applies to blanked zones that overlap. The blanking status of the zone with the highest priority will determine if the area is blanked or not. Example: Zone 1 is blanked but a portion of the zone overlaps zone 8 which is not blanked. The overlapped portion of zone 1 will be displayed on the monitor with the zone 8 label.
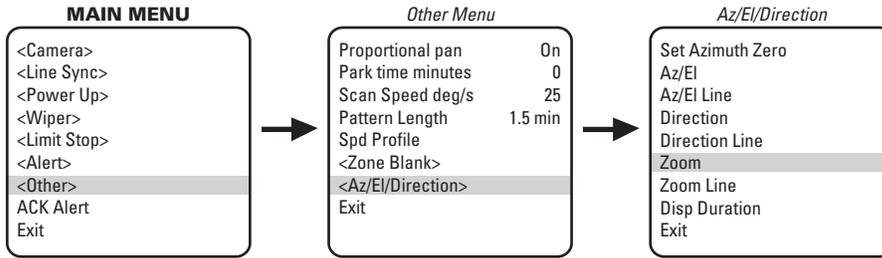
There are two video zone blank settings:

- **On:** Enables video blanking.
- **Off:** Disables video blanking.

To change the video blank zone setting:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Zone Blank.

5. Press the Iris Open button to enter the Zone Blank menu.

6. Position the cursor (>) beside the number of the zone for which you want to set the blank option.

7. Press the Iris Open button. The cursor moves to the right, beside the word On or Off.

8. Move the joystick up or down to toggle between the words On and Off.

9. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

   CANCEL: Press the Iris Close button if you do not want to change the setting.

ZOOM

```
       MAIN MENU                  Other Menu                 Az/El/Direction
 ┌──────────────────┐     ┌──────────────────────┐     ┌──────────────────────┐
 │ <Camera>         │     │ Proportional pan   On│     │ Set Azimuth Zero     │
 │ <Line Sync>      │     │ Park time minutes   0│     │ Az/El                │
 │ <Power Up>       │ ──► │ Scan Speed deg/s   25│ ──► │ Az/El Line           │
 │ <Wiper>          │     │ Pattern Length 1.5 min│    │ Direction            │
 │ <Limit Stop>     │     │ Spd Profile          │     │ Direction Line       │
 │ <Alert>          │     │ <Zone Blank>         │     │ Zoom                 │
 │ <Other>          │     │ <Az/El/Direction>    │     │ Zoom Line            │
 │ ACK Alert        │     │ Exit                 │     │ Disp Duration        │
 │ Exit             │     │                      │     │ Exit                 │
 └──────────────────┘     └──────────────────────┘     └──────────────────────┘
```

Zoom programs the horizontal display position of the Zoom label. The following settings are available for the Zoom label:
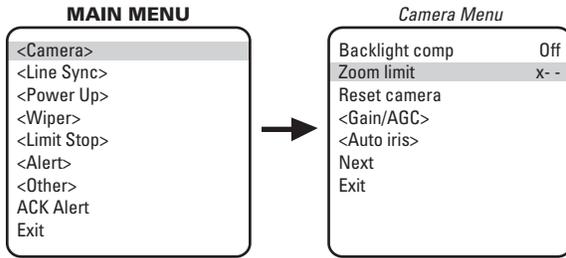
- **Off:** Label is not displayed.
- **Left:** Label is displayed on the left-hand side of the screen.
- **Center (default):** Label is displayed in the center of the screen.
- **Right:** Label is displayed on the right-hand side of the screen.

NOTE: Zoom display is not available while you are programming or running a pattern.

To program the horizontal label position for Zoom:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Az/El/Direction.

5. Press the Iris Open button to enter the Az/El/Direction menu.

6. Position the cursor (>) beside Zoom.

7. Press the Iris Open button. The cursor moves to the right.

8. Move the joystick up or down to view the available selections.

9. **SELECT:** Press the Iris Open button to make a selection.

   CANCEL: Press the Iris Close button to cancel a selection.

ZOOM LIMIT

MAIN MENU

<Camera>	
<Line Sync>	
<Power Up>	
<Wiper>	
<Limit Stop>	
<Alert>	
<Other>	
ACK Alert	
Exit	

Camera Menu

Backlight comp	Off
Zoom limit	x- -
Reset camera	
<Gain/AGC>	
<Auto iris>	
Next	
Exit	

ES30PC16/ES31PC16: 16X optical zoom and 10X electronic zoom, can be set for 16X, 32X, 64X, 128X, or 160X.

ES30PC22/ES31PC22: 22X optical zoom and 10X electronic zoom, can be set for 22X, 32X, 88X, 176X, or 220X.

ES30PCBW24/ES31PCBW24: 24X optical zoom and 10X electronic zoom, can be set for 24X, 32X, 96X, 192X, or 240X.

To change the zoom limit:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Camera.

3. Press the Iris Open button to enter the Camera menu.

4. Position the cursor (>) beside Zoom Limit.

5. Press the Iris Open button. The cursor moves to the right, beside the current zoom limit.

6. Move the joystick up or down to choose the zoom limit.

7. **SELECT:** Press the Iris Open button on your keyboard to select your choice.

    CANCEL: Press the Iris Close button if you do not want to change the setting.

ZOOM LINE

MAIN MENU	Other Menu	Az/El/Direction
<Camera>	Proportional pan On	Set Azimuth Zero
<Line Sync>	Park time minutes 0	Az/El
<Power Up>	Scan Speed deg/s 25	Az/El Line
<Wiper>	Pattern Length 1.5 min	Direction
<Limit Stop>	Spd Profile	Direction Line
<Alert>	<Zone Blank>	Zoom
<Other>	<Az/El/Direction>	Zoom Line
ACK Alert	Exit	Disp Duration
Exit		Exit
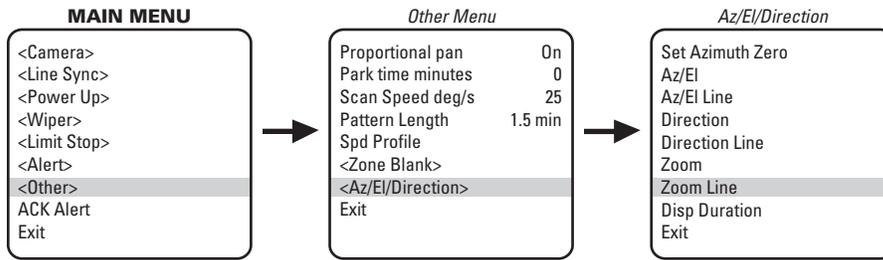
Zoom Line controls the vertical display position of the Zoom label. The label may be displayed on lines 3 through 10. Line 3 is the third line from the top of the screen and line 10 is located at the bottom of the screen. Line 10 is the default setting.

NOTE: Zoom display is not available while you are programming or running a pattern.

To program the vertical label position for zoom:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside Other.

3. Press the Iris Open button to enter the Other menu.

4. Position the cursor (>) beside Az/El/Direction .

5. Press the Iris Open button to enter the Az/El/Direction menu.

6. Position the cursor (>) beside Zoom Line.

7. Press the Iris Open button. The cursor moves to the right.

8. Move the joystick up or down to view the available selections.

9. **SELECT:** Press the Iris Open button to make a selection.

   CANCEL: Press the Iris Close button to cancel selection.

Troubleshooting

NOTE: The system contains no user-serviceable parts. If there is a problem with your system, it must be returned to Pelco for servicing.

Symptom: System does not operate.

1. Check system input voltage.

2. The Esprit system is protected by a resettable overcurrent protective device located in the transformer module. Whenever a fault condition is experienced in the system causing excessive current flow through the protective device, a change occurs that will prevent current flow. The protective device will remain in this state as long as power is applied and the system fault remains. The protective device will reset itself after power has been removed for a few minutes and will operate normally when the system fault has been repaired.

3. Check the camera and lens power connections and video BNC connections.

Symptom: No control/sluggish control (Coaxitron)

1. Check for correct type and length of coax cable.

2. Check for correct coax termination (refer to the controller manual to determine proper termination of video input). Normal load termination is 75 ohms. When looping through VCRs or multiplexers, make sure the signal is terminated at the end device. Some termination symptoms and problems are listed below.

Symptom	Problem
Extremely bright video	No termination or high resistance
Over contrast or contrast level of monitor needs to be increased to maximum for a good video image	Double termination (37.5 ohms)

3. If pan and tilt operation is sluggish, check the controller manual to make sure the control signal is set in the extended mode, not standard mode.

Symptom: No control (RS-422)

1. Check for correct cable type and length. The maximum cable distance for RS-422 communication over 24-gauge wire is 4,000 feet (1,219 m). Pelco recommends using shielded twisted pairs, such as Belden 9843 or similar cable, that meets or exceeds the basic requirements for EIA RS-422 or RS-485 applications.

2. Check for correct wire connections between transmitting device (such as the CM6700 Series matrix system) and Esprit system receiver. Correct connections are from the transmitting device TX+ to Esprit system RX+ and from the transmitting device TX- to Esprit system RX-.

3. Check for correct DIP switch settings.

Symptom: Ground loops

Ground loops are indicated by seeing 60 Hz noise on the video.

1. Check for resistance between the grounds of the keyboard and the system. Ideally, there should be zero ohms.

2. Remove the coax BNC connector and check for voltage between the BNC shield of the controller and the BNC shield of the system. No voltage should be detected.

It is recommended that a Pelco GIT100 ground isolation transformer be installed to eliminate the above problems.

Symptom: No video or poor video

1. Check the video and power connections to the camera.

2. Check for power to the camera from the Esprit system camera power output.

3. Check all coax BNC connectors from the camera to the monitor.

4. Make sure the controller is set for the correct camera-to-monitor viewing combination; for example, Camera 1 to Monitor 1. Refer to the controller manual for information.

5. Check for normal load termination of 75 ohms. When looping through VCRs or multiplexers, make sure the signal is terminated at the end device. Some termination symptoms and problems are listed below.

Symptom	Problem
Extremely bright video	No termination or high resistance
Over contrast or contrast level of monitor needs to be increased to maximum for a good video image	Double termination (37.5 ohms)

Maintenance

Clean the enclosure window periodically with a mild non-abrasive detergent in water and a soft cloth to help maintain picture clarity. If operating problems are experienced with the system, refer to the Troubleshooting section.

WIPER

If the window wiper assembly is installed, replace worn or deteriorated wiper blades immediately. At a minimum, replace wiper blade once a year.

To order replacement wiper blades or if further maintenance is required, contact Pelco's Customer Service Department for assistance. Refer to the *Warranty and Return Information*.

PRESSURIZED IOC

IMPORTANT: Disconnect power to the Esprit system before removing or installing the pressurized cartridge. Software conflicts can occur if the Esprit is not powered-down before removing/installing the IOC.

There are no user-serviceable parts internal to the pressurized integrated optics cartridge. If vessel fails, Pelco recommends that it be returned to the factory for replacement or repair.

Removing the IOC

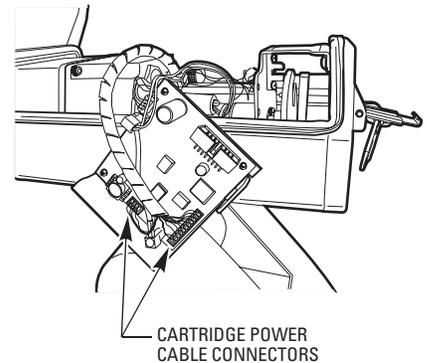1. Remove the 4 Phillips screws located on the outside viewing window.
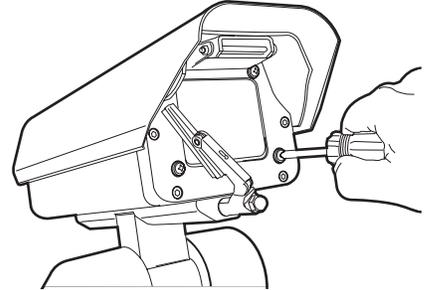
2. Open hinge door to the system. Remove the cap screw that secures the wiper board. Unplug the ribbon cable connector.

RIBBON CABLE CONNECTOR

CAP SCREW
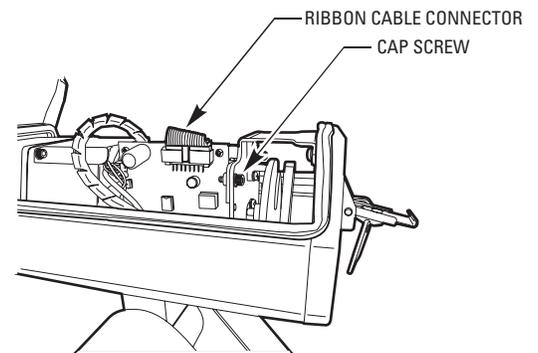
3. Lift up wiper board and unplug the cartridge power cables. Let board dangle to the side of the enclosure.

CARTRIDGE POWER CABLE CONNECTORS

CARTRIDGE

4. Lift cartridge out of the enclosure.
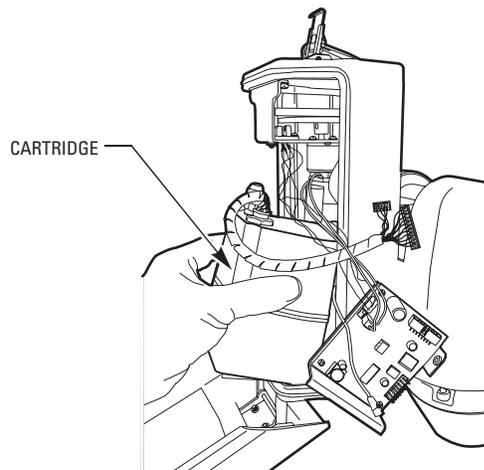
Appendix

NOTE: Esprit will sense and automatically select input from Coaxitron control signals in either the standard or extended mode. Therefore, the DIP switch settings have no effect on Coaxitron control signals.

Table A. Switch Settings for SW1

	Switch Setting		
Baud Rate	**SW1-1**	**SW1-2**	**SW1-3**
2400	OFF	OFF	OFF*
4800	ON	OFF	OFF*
9600	OFF	ON	OFF*

*SW1-3 is not used; set it in the OFF position.

Switch Setting				
SW1-4	**SW1-5**	**SW1-6**	**SW1-7**	**SW1-8**
OFF*	**Note (1)**	**Note (2)**	**Note (3)**	**Note (4)**
NOTES:				
(1) SW1-5 OFF For controllers that have more than 32 presets. ON For American Dynamics controllers (32 presets).				
(2) SW1-6 OFF For all control systems except CM9502 with variable speed keyboards. For CM9502 with fixed speed keyboards, set switch OFF. ON For CM9502 with variable speed keyboards to get smoother joystick control.				
(3) SW1-7 OFF RS-422 transmitter is not terminated. ON RS-422 transmitter is terminated.				
(4) SW1-8 OFF 1.2 volt peak-to-peak video level. ON 1 volt peak-to-peak video level.				

*SW1-4 is not used; set it in the OFF position.

NOTE: The Esprit will sense and automatically select input from Coaxitron control signals in either the standard or extended mode. Therefore, the DIP switches settings have no effect on Coaxitron control signals.

Receiver Address P-Type Control	D-Type Control	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
1	–	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
3	2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
5	4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
7	6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
8	7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
9	8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
11	10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
12	11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
13	12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
14	13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
15	14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
16	15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
17	16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
19	18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
20	19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
21	20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
22	21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
23	22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
24	23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
25	24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
26	25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
27	26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
28	27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
29	28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
30	29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
31	30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
32	31	ON	ON	ON	ON	ON	OFF	OFF	OFF
–	32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
–	33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
–	34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
–	35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
–	36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
–	37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
–	38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
–	39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
–	40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
–	41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
–	42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
–	43	ON	ON	OFF	ON	OFF	ON	OFF	OFF
–	44	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
–	45	ON	OFF	ON	ON	OFF	ON	OFF	OFF
–	46	OFF	ON	ON	ON	OFF	ON	OFF	OFF
–	47	ON	ON	ON	ON	OFF	ON	OFF	OFF
–	48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
–	49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
–	50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
–	51	ON	ON	OFF	OFF	ON	ON	OFF	OFF
–	52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
–	53	ON	OFF	ON	OFF	ON	ON	OFF	OFF
–	54	OFF	ON	ON	OFF	ON	ON	OFF	OFF
–	55	ON	ON	ON	OFF	ON	ON	OFF	OFF
–	56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
–	57	ON	OFF	OFF	ON	ON	ON	OFF	OFF
–	58	OFF	ON	OFF	ON	ON	ON	OFF	OFF
–	59	ON	ON	OFF	ON	ON	ON	OFF	OFF
–	60	OFF	OFF	ON	ON	ON	ON	OFF	OFF
–	61	ON	OFF	ON	ON	ON	ON	OFF	OFF
–	62	OFF	ON	ON	ON	ON	ON	OFF	OFF
–	63	ON	ON	ON	ON	ON	ON	OFF	OFF
–	64	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
–	65	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
–	66	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
–	67	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
–	68	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
–	69	ON	OFF	ON	OFF	OFF	OFF	ON	OFF
–	70	OFF	ON	ON	OFF	OFF	OFF	ON	OFF
–	71	ON	ON	ON	OFF	OFF	OFF	ON	OFF
–	72	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
–	73	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
–	74	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
–	75	ON	ON	OFF	ON	OFF	OFF	ON	OFF
–	76	OFF	OFF	ON	ON	OFF	OFF	ON	OFF
–	77	ON	OFF	ON	ON	OFF	OFF	ON	OFF
–	78	OFF	ON	ON	ON	OFF	OFF	ON	OFF
–	79	ON	ON	ON	ON	OFF	OFF	ON	OFF
–	80	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
–	81	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
–	82	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
–	83	ON	ON	OFF	OFF	ON	OFF	ON	OFF
–	84	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
–	85	ON	OFF	ON	OFF	ON	OFF	ON	OFF
–	86	OFF	ON	ON	OFF	ON	OFF	ON	OFF
–	87	ON	ON	ON	OFF	ON	OFF	ON	OFF
–	88	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
–	89	ON	OFF	OFF	ON	ON	OFF	ON	OFF
–	90	OFF	ON	OFF	ON	ON	OFF	ON	OFF
–	91	ON	ON	OFF	ON	ON	OFF	ON	OFF
–	92	OFF	OFF	ON	ON	ON	OFF	ON	OFF
–	93	ON	OFF	ON	ON	ON	OFF	ON	OFF
–	94	OFF	ON	ON	ON	ON	OFF	ON	OFF
–	95	ON	ON	ON	ON	ON	OFF	ON	OFF
–	96	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF
–	97	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
–	98	OFF	ON	OFF	OFF	OFF	ON	ON	OFF
–	99	ON	ON	OFF	OFF	OFF	ON	ON	OFF
–	100	OFF	OFF	ON	OFF	OFF	ON	ON	OFF
–	101	ON	OFF	ON	OFF	OFF	ON	ON	OFF
–	102	OFF	ON	ON	OFF	OFF	ON	ON	OFF
–	103	ON	ON	ON	OFF	OFF	ON	ON	OFF
–	104	OFF	OFF	OFF	ON	OFF	ON	ON	OFF
–	105	ON	OFF	OFF	ON	OFF	ON	ON	OFF
–	106	OFF	ON	OFF	ON	OFF	ON	ON	OFF
–	107	ON	ON	OFF	ON	OFF	ON	ON	OFF
–	108	OFF	OFF	ON	ON	OFF	ON	ON	OFF
–	109	ON	OFF	ON	ON	OFF	ON	ON	OFF
–	110	OFF	ON	ON	ON	OFF	ON	ON	OFF
–	111	ON	ON	ON	ON	OFF	ON	ON	OFF

Receiver Address P-Type Control	D-Type Control	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
–	112	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
–	113	ON	OFF	OFF	OFF	ON	ON	ON	OFF
–	114	OFF	ON	OFF	OFF	ON	ON	ON	OFF
–	115	ON	ON	OFF	OFF	ON	ON	ON	OFF
–	116	OFF	OFF	ON	OFF	ON	ON	ON	OFF
–	117	ON	OFF	ON	OFF	ON	ON	ON	OFF
–	118	OFF	ON	ON	OFF	ON	ON	ON	OFF
–	119	ON	ON	ON	OFF	ON	ON	ON	OFF
–	120	OFF	OFF	OFF	ON	ON	ON	ON	OFF
–	121	ON	OFF	OFF	ON	ON	ON	ON	OFF
–	122	OFF	ON	OFF	ON	ON	ON	ON	OFF
–	123	ON	ON	OFF	ON	ON	ON	ON	OFF
–	124	OFF	OFF	ON	ON	ON	ON	ON	OFF
–	125	ON	OFF	ON	ON	ON	ON	ON	OFF
–	126	OFF	ON	ON	ON	ON	ON	ON	OFF
–	127	ON	ON	ON	ON	ON	ON	ON	OFF
–	128	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
–	129	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON
–	130	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON
–	131	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
–	132	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
–	133	ON	OFF	ON	OFF	OFF	OFF	OFF	ON
–	134	OFF	ON	ON	OFF	OFF	OFF	OFF	ON
–	135	ON	ON	ON	OFF	OFF	OFF	OFF	ON
–	136	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
–	137	ON	OFF	OFF	ON	OFF	OFF	OFF	ON
–	138	OFF	ON	OFF	ON	OFF	OFF	OFF	ON
–	139	ON	ON	OFF	ON	OFF	OFF	OFF	ON
–	140	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
–	141	ON	OFF	ON	ON	OFF	OFF	OFF	ON
–	142	OFF	ON	ON	ON	OFF	OFF	OFF	ON
–	143	ON	ON	ON	ON	OFF	OFF	OFF	ON
–	144	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON
–	145	ON	OFF	OFF	OFF	ON	OFF	OFF	ON
–	146	OFF	ON	OFF	OFF	ON	OFF	OFF	ON
–	147	ON	ON	OFF	OFF	ON	OFF	OFF	ON
–	148	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
–	149	ON	OFF	ON	OFF	ON	OFF	OFF	ON
–	150	OFF	ON	ON	OFF	ON	OFF	OFF	ON
–	151	ON	ON	ON	OFF	ON	OFF	OFF	ON
–	152	OFF	OFF	OFF	ON	ON	OFF	OFF	ON
–	153	ON	OFF	OFF	ON	ON	OFF	OFF	ON
–	154	OFF	ON	OFF	ON	ON	OFF	OFF	ON
–	155	ON	ON	OFF	ON	ON	OFF	OFF	ON
–	156	OFF	OFF	ON	ON	ON	OFF	OFF	ON
–	157	ON	OFF	ON	ON	ON	OFF	OFF	ON
–	158	OFF	ON	ON	ON	ON	OFF	OFF	ON
–	159	ON	ON	ON	ON	ON	OFF	OFF	ON
–	160	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON
–	161	ON	OFF	OFF	OFF	OFF	ON	OFF	ON
–	162	OFF	ON	OFF	OFF	OFF	ON	OFF	ON
–	163	ON	ON	OFF	OFF	OFF	ON	OFF	ON
–	164	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
–	165	ON	OFF	ON	OFF	OFF	ON	OFF	ON
–	166	OFF	ON	ON	OFF	OFF	ON	OFF	ON
–	167	ON	ON	ON	OFF	OFF	ON	OFF	ON
–	168	OFF	OFF	OFF	ON	OFF	ON	OFF	ON
–	169	ON	OFF	OFF	ON	OFF	ON	OFF	ON
–	170	OFF	ON	OFF	ON	OFF	ON	OFF	ON
–	171	ON	ON	OFF	ON	OFF	ON	OFF	ON
–	172	OFF	OFF	ON	ON	OFF	ON	OFF	ON

Receiver Address P-Type Control	D-Type Control	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
–	173	ON	OFF	ON	ON	OFF	ON	OFF	ON
–	174	OFF	ON	ON	ON	OFF	ON	OFF	ON
–	175	ON	ON	ON	ON	OFF	ON	OFF	ON
–	176	OFF	OFF	OFF	OFF	ON	ON	OFF	ON
–	177	ON	OFF	OFF	OFF	ON	ON	OFF	ON
–	178	OFF	ON	OFF	OFF	ON	ON	OFF	ON
–	179	ON	ON	OFF	OFF	ON	ON	OFF	ON
–	180	OFF	OFF	ON	OFF	ON	ON	OFF	ON
–	181	ON	OFF	ON	OFF	ON	ON	OFF	ON
–	182	OFF	ON	ON	OFF	ON	ON	OFF	ON
–	183	ON	ON	ON	OFF	ON	ON	OFF	ON
–	184	OFF	OFF	OFF	ON	ON	ON	OFF	ON
–	185	ON	OFF	OFF	ON	ON	ON	OFF	ON
–	186	OFF	ON	OFF	ON	ON	ON	OFF	ON
–	187	ON	ON	OFF	ON	ON	ON	OFF	ON
–	188	OFF	OFF	ON	ON	ON	ON	OFF	ON
–	189	ON	OFF	ON	ON	ON	ON	OFF	ON
–	190	OFF	ON	ON	ON	ON	ON	OFF	ON
–	191	ON	ON	ON	ON	ON	ON	OFF	ON
–	192	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON
–	193	ON	OFF	OFF	OFF	OFF	OFF	ON	ON
–	194	OFF	ON	OFF	OFF	OFF	OFF	ON	ON
–	195	ON	ON	OFF	OFF	OFF	OFF	ON	ON
–	196	OFF	OFF	ON	OFF	OFF	OFF	ON	ON
–	197	ON	OFF	ON	OFF	OFF	OFF	ON	ON
–	198	OFF	ON	ON	OFF	OFF	OFF	ON	ON
–	199	ON	ON	ON	OFF	OFF	OFF	ON	ON
–	200	OFF	OFF	OFF	ON	OFF	OFF	ON	ON
–	201	ON	OFF	OFF	ON	OFF	OFF	ON	ON
–	202	OFF	ON	OFF	ON	OFF	OFF	ON	ON
–	203	ON	ON	OFF	ON	OFF	OFF	ON	ON
–	204	OFF	OFF	ON	ON	OFF	OFF	ON	ON
–	205	ON	OFF	ON	ON	OFF	OFF	ON	ON
–	206	OFF	ON	ON	ON	OFF	OFF	ON	ON
–	207	ON	ON	ON	ON	OFF	OFF	ON	ON
–	208	OFF	OFF	OFF	OFF	ON	OFF	ON	ON
–	209	ON	OFF	OFF	OFF	ON	OFF	ON	ON
–	210	OFF	ON	OFF	OFF	ON	OFF	ON	ON
–	211	ON	ON	OFF	OFF	ON	OFF	ON	ON
–	212	OFF	OFF	ON	OFF	ON	OFF	ON	ON
–	213	ON	OFF	ON	OFF	ON	OFF	ON	ON
–	214	OFF	ON	ON	OFF	ON	OFF	ON	ON
–	215	ON	ON	ON	OFF	ON	OFF	ON	ON
–	216	OFF	OFF	OFF	ON	ON	OFF	ON	ON
–	217	ON	OFF	OFF	ON	ON	OFF	ON	ON
–	218	OFF	ON	OFF	ON	ON	OFF	ON	ON
–	219	ON	ON	OFF	ON	ON	OFF	ON	ON
–	220	OFF	OFF	ON	ON	ON	OFF	ON	ON
–	221	ON	OFF	ON	ON	ON	OFF	ON	ON
–	222	OFF	ON	ON	ON	ON	OFF	ON	ON
–	223	ON	ON	ON	ON	ON	OFF	ON	ON
–	224	OFF	OFF	OFF	OFF	OFF	ON	ON	ON
–	225	ON	OFF	OFF	OFF	OFF	ON	ON	ON
–	226	OFF	ON	OFF	OFF	OFF	ON	ON	ON
–	227	ON	ON	OFF	OFF	OFF	ON	ON	ON
–	228	OFF	OFF	ON	OFF	OFF	ON	ON	ON
–	229	ON	OFF	ON	OFF	OFF	ON	ON	ON
–	230	OFF	ON	ON	OFF	OFF	ON	ON	ON
–	231	ON	ON	ON	OFF	OFF	ON	ON	ON
–	232	OFF	OFF	OFF	ON	OFF	ON	ON	ON
–	233	ON	OFF	OFF	ON	OFF	ON	ON	ON

| Receiver Address | | Switch Setting | | | | | | | |
P-Type Control	D-Type Control	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
–	234	OFF	ON	OFF	ON	OFF	ON	ON	ON
–	235	ON	ON	OFF	ON	OFF	ON	ON	ON
–	236	OFF	OFF	ON	ON	OFF	ON	ON	ON
–	237	ON	OFF	ON	ON	OFF	ON	ON	ON
–	238	OFF	ON	ON	ON	OFF	ON	ON	ON
–	239	ON	ON	ON	ON	OFF	ON	ON	ON
–	240	OFF	OFF	OFF	OFF	ON	ON	ON	ON
–	241	ON	OFF	OFF	OFF	ON	ON	ON	ON
–	242	OFF	ON	OFF	OFF	ON	ON	ON	ON
–	243	ON	ON	OFF	OFF	ON	ON	ON	ON
–	244	OFF	OFF	ON	OFF	ON	ON	ON	ON

| Receiver Address | | Switch Setting | | | | | | | |
P-Type Control	D-Type Control	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
–	245	ON	OFF	ON	OFF	ON	ON	ON	ON
–	246	OFF	ON	ON	OFF	ON	ON	ON	ON
–	247	ON	ON	ON	OFF	ON	ON	ON	ON
–	248	OFF	OFF	OFF	ON	ON	ON	ON	ON
–	249	ON	OFF	OFF	ON	ON	ON	ON	ON
–	250	OFF	ON	OFF	ON	ON	ON	ON	ON
–	251	ON	ON	OFF	ON	ON	ON	ON	ON
–	252	OFF	OFF	ON	ON	ON	ON	ON	ON
–	253	ON	OFF	ON	ON	ON	ON	ON	ON
–	254	OFF	ON	ON	ON	ON	ON	ON	ON

Specifications

ELECTRICAL

Input Voltage	24, 120, or 230 VAC, 50/60 Hz; switch selectable for 120/230 VAC inputs. Reset feature enabled when power becomes unstable or interrupted.
Power Requirements	Maximum power consumption is 70 VA per system
Heater and Defroster	Thermostatically controlled heater consumes 10 watts and cycles on at 40°F (5°C) and off at 60°F (16°C)
Defogger	The window defogger consumes 3 watts and cycles on at 70°F (21°C) and off at 85°F (29°C)
Electrical Connections	2 power source connections made at mount location with wire splices and 1 ground wire splice; 1 BNC receptacle and 4 wire splices at mount location for RS-422 D and P protocols; 2 wire splices for open collector auxiliary output
Aux 2	Open collector output with 2-second activation; connected relay must require no more than 32 VDC and 40 mA to energize relay coil; wire length between Esprit and relay must be less than 100 ft (30 m)

MECHANICAL

Construction	
System	Die-cast, extruded, and sheet aluminum; stainless steel hardware
EWM Wall Mount	Aluminum
EPA Pedestal Adapter	Aluminum
Finish	
System	Gray polyester powder coat, anodized
EWM Wall Mount	Gray polyester powder coat
EPA Pedestal Adapter	Gray polyester powder coat
Viewing Window	0.23-inch (5.84 mm) thick, optically clear, polycarbonate with proprietary impact resistant UV rated coating
Window Viewing Area	2-inch (5 cm) diameter

CAMERAS

Scanning System	
ES30PC16/ES31PC16 and ES30PC22/ES31PC22	2:1 interlace
ES30PCBW24/ES31PCBW24	2:1 interlace
Image Sensor	1/4-inch
Effective Pixels	
ES30PC16/ES31PC16 NTSC	768 (H) x 494 (V)
ES30PC16/ES31PC16 PAL	752 (H) x 582 (V)
ES30PC22/ES31PC22 NTSC	768 (H) x 494 (V)
ES30PC22/ES31PC22 PAL	752 (H) x 582 (V)
ES30PCBW24/ES31PCBW24 NTSC	768 (H) x 494 (V)
ES30PCBW24/ES31PCBW24 PAL	752 (H) x 582 (V)
Horizontal Resolution	
ES30PC16/ES31PC16	>470 TV lines (NTSC) >460 TV lines (PAL)
ES30PC22/ES31PC22	>470 TV lines (NTSC) >460 TV lines (PAL)
ES30PCBW24/ES31PCBW24	>520 TV lines (NTSC) >520 TV lines (PAL)
Focal Length	
ES30PC16/ES31PC16	4 mm to 64 mm optical
ES30PC22/ES31PC22	4 mm to 88 mm optical
ES30PCBW24/ES31PCBW24	3.8 mm to 91.2 mm optical
Zoom Ratio	
ES30PC16/ES31PC16	16X optical zoom, 10X electronic zoom
ES30PC22/ES31PC22	22X optical zoom, 10X electronic zoom
ES30PCBW24/ES31PCBW24	24X optical zoom, 10X elecronic zoom
Digital Slow Shutter	Auto/manual speed selection
Horizontal Angle of View	
ES30PC16/ES31PC16	43° at 4 mm wide zoom; 3° at 63 mm telephoto zoom
ES30PC22/ES31PC22	47° at 4 mm wide zoom; 2° at 88 mm telephoto zoom
ES30PCBW24/ES31PCBW24	50.7° at 3.8 mm wide zoom; 2.3° at 91.2 mm telephoto zoom

Focus	Automatic and manual override
Sensitivity	
ES30PC16/ES31PC16	0.05 lux at 1/2-second shutter speed (NTSC)
	0.05 lux at 1/1.5-second shutter speed (PAL)
ES30PC22/ES31PC22	0.02 lux at 1/2-second shutter speed (NTSC)
	0.02 lux at 1/1.5-second shutter speed (PAL)
ES30PCBW24/ES31PCBW24	0.005 lux at 1/2-second shutter speed (color, NTSC/PAL)
	0.015 lux at 1/60-second shutter speed (B-W, NTSC/PAL)
	0.0005 lux at 1/2-second shutter speed (B-W, NTSC/PAL)
Synchronization System	AC line lock, phase adjustable via remote control*
White Balance	Automatic with manual override*
Shutter Speed	1/2 to 1/30,000 (NTSC)
	1/1.5 to 1/30,000 (PAL)
Iris Control	Automatic with manual override*
Gain Control	
ES30PC16/ES31PC16	Automatic with manual override*
ES30PC22/ES31PC22	Automatic/OFF*
ES30PCBW24/ES31PCBW24	Automatic/OFF*
Video Output	1 Vp-p, 75 ohms
Signal-to-Noise Ratio	
ES30PC16/ES31PC16	46 dB
ES30PC22/ES31PC22	50 dB
ES30PCBW24/ES31PCBW24	50 dB
Construction	Die-cast, extruded, and sheet aluminum; stainless steel hardware
Finish	Gray polyester powder coat
Viewing Window	0.23-inch (5.84 mm) thick, optically clear, impact/scratch-resistant coated LEXAN®
Operating Temperature	-50° to 122°F (-45° to 50°C) for sustained system operation or 140°F (60°C) absolute maximum. Within 2 hours after power-up, the entire unit can de-ice and be operational from a temperature of -13°F (-25°C).
Operating Environment	Will remain operational in 90 mph wind conditions; withstands 130 mph.
Dimensions	See dimension drawing

Unit Weight	With Pedestal Adapter	With Wall Mount
Standard with IOC	20 lb (9.0 kg)	22 lb (9.9 kg)
With Wiper and IOC	21 lb (9.5 kg)	23 lb (10.4 kg)

Ratings   Meets the following standards:
- NEMA Type 4X (Pan/Tilt and Enclosure)
- IP66 (Pan/Tilt and Enclosure)
- IP67 (Pressurized Integrated Optics Cartridge [IOC])

*Manual control of camera setup functions can be done with CM6700, CM6800, CM8500, CM9500, CM9740, CM9760, CM9770, KBD200A, KBD300A, and MPT9500 controllers, but not with CM7500, MPT9000, or KBD9000 controllers.

(Design and product specifications subject to change without notice.)
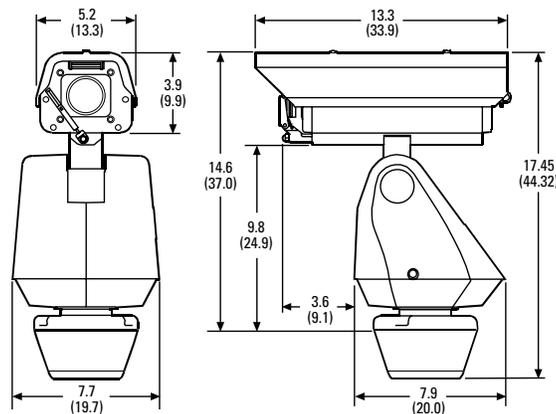
NOTE: VALUES IN PARENTHESES ARE CENTIMETERS;
ALL OTHERS ARE INCHES.

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years on FR/FT/FS Series fiber optic products and TW3000 Series unshielded twisted pair transmission products.

- Three years on Genex® Series products (multiplexers, server, and keyboard).

- Three years on Camclosure® and fixed camera models, except the CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models, which have a five-year warranty.

- Three years on PMCL200/300/400 Series LCD monitors.

- Two years on standard motorized or fixed focal length lenses.

- Two years on Legacy®, CM6700/CM6800/CM9700 Series matrix, and DF5/DF8 Series fixed dome products.

- Two years on Spectra®, Esprit®, ExSite™, and PS20 scanners, including when used in continuous motion applications.

- Two years on Esprit® and WW5700 Series window wiper (excluding wiper blades).

- Two years (except lamp and color wheel) on Digital Light Processing (DLP®) displays. The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.

- Eighteen months on DX Series digital video recorders, NVR300 Series network video recorders, and Endura™ Series distributed network-based video products.

- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.

- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico, send goods to:

Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco
3500 Pelco Way
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors
473 Eccles Avenue
South San Francisco, CA 94080 USA
Phone: 650-737-1700
Fax: 650-737-0933

This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

REVISION HISTORY

Manual #	Date	Comments
C311M	6/01	Original version.
C311M-A	8/02	Camera modifications.
C311M-B	9/02	Revised per ECO 02-8063.
C311M-C	11/02	Revised installation instructions for addition of alignment label.
C311M-D	6/03	Added Az/El/Direction menu per ECO 03-8861. Updated to new format.
C311M-E	8/03	Revised per ECO 03-9210 for new camera model.
C311M-F	9/03	Revised Preset Functions description on page 14.
C311M-G	10/03	Revised per ECO 03-9238. Updated to match spec sheet.
C311M-H	12/03	Revised per ECO 03-9187. Changed Dip Switch Setting instructions to reflect new location of the Dip Switch Settings label.
C311M-I	2/04	Referenced wire clamps per ECO 04-9710. Revised the signal to noise ratio for the ES30PC22/ES31PC22.
C311M-J	6/04	Updated manual for software release v3.18 per ECO 04-9694.
C311M-K	9/04	Updated manual for software release v3.23 per ECO 04-10248.
C311M-L	1/05	DIP switch SW1-8 functionality changed to video level per ECO 02-8186.
C311M-M	11/05	Added information on ES30PCBW24/ES31PCBW24.
C311M-N	6/06	Removed information on ES30PCBW18/ES31PCBW18 per ECO 05-11252.