

# ES40E/ES41E Series IP Positioning System

## ES40E/ES41E ESPRIT® SE IP, H.264, DIGITAL STANDARD AND PRESSURIZED MODELS

### Product Features

- Receiver, Pan/Tilt, and Enclosure with Integrated Optics Package (IOP) or Pressurized Integrated Optics Cartridge (IOC), NTSC/PAL
- Tilt Range of +34° to -83° from Horizontal
- Ability to Control and Monitor Video Over IPv4 and IPv6 Networks
- H.264, MPEG-4, and MJPEG Compression
- Multilevel Password Protection
- Autotracking
- Horizontal Zone and Window Blanking
- On-Screen Compass and Tilt Display
- 256 Configurable Preset Positions
- Open IP Standards

Pelco's **ES40E/ES41E Esprit® SE IP** Positioning System features a receiver, pan/tilt, enclosure, and either an Integrated Optics Package (IOP) or a pressurized Integrated Optics Cartridge (IOC) in a single, easy-to-install system. Options include IOP or IOC models with or without wiper.

The **ES41E Series** includes a window wiper. The wiper is completely integrated into the enclosure and does not interfere with the viewing range of the system. The wiper can be configured to delay between wipes and to automatically shut off after a specified period. The wiper design also allows for easy replacement of the wiper blade.

A built-in heater, window defroster/defogger, sun shroud, and insulation blanket are standard features on the **ES40E/ES41E** units, which also include open collector auxiliary output that functions for two seconds before deactivating.

**Esprit SE IP** systems incorporate all of the features and functions of Esprit SE, while allowing you to control and monitor video over an IP network from virtually anywhere in the world. **Esprit SE IP** is a high-speed positioning system with a built-in 100Base-TX network interface for live streaming to any network application.

**Esprit SE IP** supports two simultaneous video streams. The two streams can be compressed in H.264, MPEG-4, and MJPEG formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration. The H.264 compression video files are up to 20 times smaller than MJPEG, making network video storage more affordable.



### Web Interface

**Esprit SE IP** uses a standard Web browser for powerful remote setup and administration.

Network protocols such as Secure Sockets Layer (SSL) configuration for security certificates, Secure Shell (SSH) for remote login, and Quality of Service (QoS) for priority or guaranteed data flow can be managed using a Web browser.

### Video Systemization

**Esprit SE IP** easily connects to Pelco IP and hybrid systems such as Endura® version 1.5 (or later), MPEG-4; Endura version 2.0 (or later), H.264; Digital Sentry® version 7.3 (or later); DX8100 version 2.0 (or later); DX4700/DX4800 Series 1.1 (or later); DX4700HD/DX4800HD Series v2.0 (or later); and DVR5100 version 1.5.4 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) and software developer's kit (SDK) for interfacing with Pelco's IP cameras.



by **Schneider Electric**

International Standards  
Organization Registered Firm;  
ISO 9001 Quality System



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## VIDEO

Video Encoding	H.264 base profile, MPEG-4, and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7.5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions	Resolution			JPEG		H.264 Base Profile		MPEG-4	
	Width	Height	Format	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
	704	480	NTSC	30 ips	5.4 Mbps	30 ips	1.9 Mbps	30 ips	2.0 Mbps
	352	240	NTSC	30 ips	1.3 Mbps	30 ips	0.5 Mbps	30 ips	0.6 Mbps
	704	576	PAL	25 ips	5.4 Mbps	25 ips	1.9 Mbps	25 ips	2.0 Mbps

Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, IPv6*, SNMP, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, and 802.1x (EAP)
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Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264 or MPEG-4
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras

Pelco System Integration	Endura 1.5 or later (MPEG-4) or Endura 2.0 or later (H.264); Digital Sentry 7.3 IP bundle 3 or later; DX8100 Series 2.0 or later; DX4700/DX4800 Series 1.1 or later; DX4700HD/DX4800HD Series v2.0 or later; and DVR5100 version 1.5.4 or later
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Open API	Pelco API or ONVIF v1.02
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Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, Windows 7, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.0 (or later)
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

\*Supports mixed IPv4 and IPv6 installations, but not IPv6-only deployments.  
†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

## CAMERA/OPTICS

Signal Format	NTSC, PAL
Scanning System	Interlace/progressive selectable
Image Sensor	1/4-inch EXview HAD™
Signal-to-Noise Ratio	48 dB, maximum
Effective pixels	
NTSC	768 (H) X 494 (V)
PAL	752 (H) X 582 (V)
Horizontal Resolution	>540 TV lines
Lens	f/1.4 (focal length, 3.3 ~ 119 mm optical)
Zoom	36X optical, 12X digital
Zoom Speed (optical range)	3.2/4.6/6.6 seconds
Horizontal	
Angle of View	57.2° at 3.3 mm wide zoom; 1.7° at 119 mm telephoto zoom
Focus	Automatic with manual override
Maximum Sensitivity	90% scene reflectance; f/1.4 (focal length, 3.3 ~ 119 mm); 27 dB gain; 35 IRE (245 mV equivalent)
NTSC	0.55 lux at 1/60 sec shutter ( <b>color</b> ) 0.018 lux at 1/2 sec shutter ( <b>color</b> ) 0.055 lux at 1/60 sec shutter ( <b>B-W</b> ) 0.0018 lux at 1/2 sec shutter ( <b>B-W</b> )
PAL	0.45 lux at 1/50 sec shutter ( <b>color</b> ) 0.015 lux at 1/1.5 sec shutter ( <b>color</b> ) 0.045 lux at 1/50 sec shutter ( <b>B-W</b> ) 0.0015 lux at 1/1.5 sec shutter ( <b>B-W</b> )
Sync System	AC line lock, phase adjustable using remote control, V-Sync
White Balance	Automatic with manual override
Shutter Speed	Automatic manual
NTSC	1/2 ~ 1/30,000
PAL	1/1.5 ~ 1/30,000
Iris Control	Automatic with manual override
Gain Control	Automatic/OFF
Electronic Image Stabilization	Integrated
Wide Dynamic Range	128X

## ELECTRICAL

Input Voltage	24, 120, or 230 VAC, 50/60 Hz; switch selectable for 120/230 VAC inputs
Input Voltage Range	±10%
Power Consumption	Maximum 75 VA per system
Heater and Defroster	Thermostatically controlled
Electrical Connections	2 power source connections made at mount location with wire splices and 1 ground wire splice
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 SE and relay must be less than 30 m (100 ft)

## MECHANICAL

Pan Movement	360° Continuous pan rotation
Vertical Tilt	Unobstructed +34° to -83°, ±2°
Variable Pan/Tilt Speed	
Pan	0.1° to 40°/sec variable-speed operation, 100°/sec turbo
Tilt	0.1° to 30°/sec variable-speed operation
Configurable Preset Positions	256
Preset Speeds	
Pan	100°/sec
Tilt	30°/sec
Camera Mounting	Integrated camera sled assembly
Latches	One link-lock, No. 3 stainless-steel latch; can be secured with padlock (not supplied)

## GENERAL

Construction	Die-cast, extruded and sheet aluminum; stainless steel hardware	
Finish	Gray polyester powder coat	
Viewing Window	5.84 mm (0.23-inch) thick, optically clear, polycarbonate with proprietary impact-resistant UV rated coating	
Operating Temperature	-45° to 50°C (-50° to 122°F) for sustained system operation or 60°C (140°F) absolute maximum; within two hours after power-up, the entire unit can de-ice and be operational from a temperature of -25°C (-13°F)	
Operating Environment	Will remain operational in 145 kph (90 mph) wind conditions; withstands 209 kph (130 mph)	
Operating Humidity		
Unit	Standard with IOP: 5 to 90% relative humidity (noncondensing) Standard with IOC: 5 to 100% relative humidity (condensing)	
Weight	With Pedestal Adapter	With Wall Mount
Unit		
Standard with IOP	9.0 kg (20 lb)	9.9 kg (22 lb)
With Wiper and IOP	9.5 kg (21 lb)	10.4 kg (23 lb)
Standard with IOC	9.5 kg (21 lb)	10.4 kg (23 lb)
With Wiper and IOC	10.0 kg (22 lb)	11.0 kg (24 lb)
Shipping		
Standard with IOP	11.3 kg (25 lb)	12.6 kg (28 lb)
With Wiper and IOP	11.7 kg (26 lb)	13.1 kg (29 lb)
Standard with IOC	11.7 kg (26 lb)	13.1 kg (29 lb)
With Wiper and IOC	12.3 kg (27 lb)	13.6 kg (30 lb)

## CERTIFICATIONS/RATINGS/PATENTS

### IOP MODELS

- CE, Class A
- FCC, Class A
- UL/cUL Listed, C-Tick
- Cisco® Medianet (MSP) compatible
- Meets NEMA Type 4X and IP66 standards
- U.S. Patents 340,940 and 5,224,675

### IOC MODELS

- CE, Class A
- FCC, Class A
- UL/cUL Listed, C-Tick
- Cisco® Medianet (MSP) compatible
- Meets NEMA Type 4X and IP66 standards
- Meets IP67 standards (Pressurized IOC)
- U.S. Patent D472,260

# MODEL NUMBERS

## MODELS

Enclosure Type	Signal Format	Pedestal Mount*		Wall Mount†	
		24 VAC	120/230 VAC	24 VAC	120/230 VAC
Standard with IOP	NTSC PAL	ES40E36-2N ES40E36-2N-X	ES40E36-5N ES40E36-5N-X	ES40E36-2W ES40E36-2W-X	ES40E36-5W ES40E36-5W-X
With Wiper and IOP	NTSC PAL	ES41E36-2N ES41E36-2N-X	ES41E36-5N ES41E36-5N-X	ES41E36-2W ES41E36-2W-X	ES41E36-5W ES41E36-5W-X
Standard with IOC	NTSC PAL	ES40EP36-2N ES40EP36-2N-X	ES40EP36-5N ES40EP36-5N-X	ES40EP36-2W ES40EP36-2W-X	ES40EP36-5W ES40EP36-5W-X
With Wiper and IOC	NTSC PAL	ES41EP36-2N ES41EP36-2N-X	ES41EP36-5N ES41EP36-5N-X	ES41EP36-2W ES41EP36-2W-X	ES41EP36-5W ES41EP36-5W-X

\*Pedestal mount models include Esprit EPP pedestal adapter plate. Use with PM2000/PM2010 mount (not supplied) for pedestal application.

† Wall mount models include Esprit EWM wall mount. Optional mounting adapters for corner, pole, and parapet applications are available.

## REPLACEMENT INTEGRATED OPTICS PACKAGE (IOP)

The following IOP modules are replacement components only; they are not interchangeable.

ESIOP36	Esprit high resolution day/night camera and lens module, 36X, NTSC format
ESIOP36-X	Same as ESIOP36 except PAL format

## REPLACEMENT PRESSURIZED INTEGRATED OPTICS CARTRIDGE (IOC)

The following IOC models are replacement components only; they are not interchangeable.

IOC-36	Esprit high resolution day/night camera and lens module, 36X, NTSC format
IOC-36-X	Same as IOC-36 except PAL format
SECURE-SLA License	Enables Information Assurance compliant mode of operation

## OPTIONAL ACCESSORIES

ES-REPLBLADE-2	Package of 2 window wiper replacement blades
ES-REPLBLADE-10	Package of 10 window wiper replacement blades

## OPTIONAL MOUNTS AND ADAPTERS

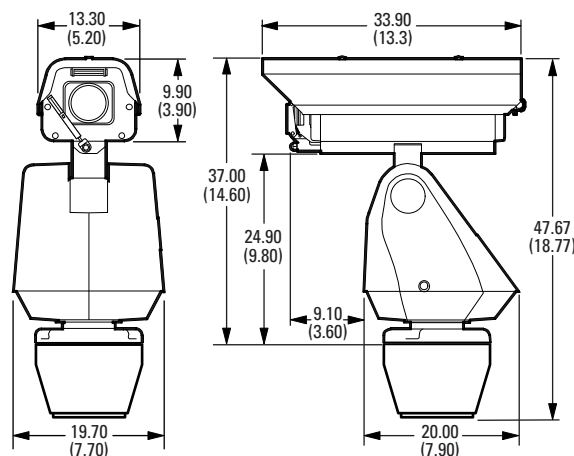
ECM100	Corner mount adapter for use with EWM wall mount
EPM	Pole mount adapter for use with EWM wall mount
EA4348	EWM-to-Legacy adapter; use with PP4348 parapet mount
PM2000/PM2010	Pedestal mount with cable feedthrough; for use with Esprit systems with EPP pedestal adapter plate

## RECOMMENDED POWER SUPPLIES

MCS Series	Multiple 24 VAC camera power supply, indoor
WCS Series	Single/multiple 24 VAC camera power supply, outdoor



VALUES IN PARENTHESES ARE INCHES; ALL OTHERS ARE CENTIMETERS.



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