

Esprit® Enhanced Series IP Positioning System

STANDARD/PRESSURIZED MODELS, UP TO 30X OPTICAL ZOOM, FULL HD, WDR

Product Features

- SureVision 3.0 Technology, Including:
 - 130 dB Wide Dynamic Range (WDR)
 - Advanced Low Light Down to 0.03 lux on Select Models
 - Anti-Bloom Technology
 - 3D Noise Filtering
 - Enhanced Tone Mapping
- Up to Full HD 1080p and up to 30 Images per Second (ips)
- Three Automatic Defog Options
- Electronic Image Stabilization (EIS)
- Pan/Tilt and Enclosure with Integrated Optics Package (IOP) or Pressurized Integrated Optics Cartridge (IOC)
- 16 Preset Tours, 256 Presets, 32 Window Blanks
- Integrated Windows Wiper with Configurable Delay and Shut-Off on Select Models

Top of the Line IP Performance

Pelco's iconic Esprit® Series positioning system provides best-in-class image quality and pan/tilt performance. Esprit Enhanced provides the total package of impressive image quality, valuable software features, and time-tested pan/tilt performance suitable for any installation environment.

Full High Definition SureVision 3.0 Cameras

Esprit cameras have long provided a Full HD 1080p 30x optical zoom camera but with Pelco's latest product evolution, a powerful new SureVision 3.0 enabled camera is now available that features 130dB of True Wide Dynamic Range and low light performance up to twenty times better than past camera modules. The new SureVision 3.0 camera is available in either a standard or pressurized 30x optical zoom module that delivers market leading image quality for even the toughest outdoor environments. Paired with Pelco's illuminator SMR modification, the camera ensures that image quality is top-of-the-line, even on the darkest of nights.

Image Enhancement Features

Esprit has historically packed in many features that enhance the total value of the system, and with the new SureVision 3.0 cameras, even more value has been added. Since its inception, the Esprit line has had a full suite of built in video analytics, 32 window blanking privacy zones, and electronic image stabilization.

In addition to the vastly improved low light and wide dynamic range performance, the new SureVision 3.0 cameras now provide Image Defog, five new White Balance modes, and the popular Vivid Imaging Mode. Three levels of Image Defog are now available for enhancing



- Built-in Analytics Suite
- Compatible with Pelco and Third-Party Video Systems
- ONVIF Profile S
- 2-Year Warranty and Support

the image on foggy or rainy days. The new White Balance modes allow the user to overcome difficult lighting conditions caused by external sources such as Sodium Vapor lamps and the Vivid Imaging mode provides an option for automatically increased color saturation and sharpening when enabled.

Proven Performance and Reliability

Esprit Enhanced brings together the very best in enclosure design, PTZ mechanics, and receiver technologies to produce the industry's leading high-speed camera system. Installed around the world for more than 15 years, the Esprit line has been constantly updated to provide the latest pan/tilt and imaging performance. The camera is easy to install, easy to use, and highly reliable.

VMS Integration

Esprit Enhanced easily connects to Pelco IP and hybrid video systems such as VideoXpert, Endura 2.0 (or later), and Digital Sentry 7.3 (or later). The camera is also compatible with Digital Sentry NVS (DS NVS), a full-featured video management software, which is available as a free download at www.pelco.com. DS NVS includes four free Pelco IP licenses and allows for the management of video from up to 64 cameras.

Pelco endeavors to be the most open and integrated camera provider in the industry and as a part of that effort Spectra Enhanced is integrated with a long and ever-growing list of 3rd party software and Video Management Systems (VMS).



by Schneider Electric



International Standards Organization Registered Firm; ISO 9001 Quality System



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Pelco's Esprit® Enhanced Positioning System features a 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 with or without wiper and IOC models with wiper.

A powder-coated, aluminum construction makes the Esprit Enhanced Series ideal for either indoor or outdoor applications. The system has an absolute operating temperature range of -45° to 60°C (-50° to 140°F). Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of -25°C (-13°F).

The Esprit Enhanced Series variable pan and tilt speeds range from 0.1 to 40 degrees per second in manual pan mode, and 0.1 to 30 degrees per second in manual tilt. Pan preset and turbo speeds are 100 degrees per second. Tilt preset speed is 30 degrees per second.

The Esprit Enhanced Series system's IOC contains dry nitrogen pressurized to 10 psig, which protects the environment inside the cartridge eliminating internal condensation and corrosion. Sensors strategically placed in the cartridge send an "Alert" message if pressure drops below factory-set acceptable limits. The IOC is factory assembled and installed in Esprit Enhanced Series systems. All labor intensive procedures of setting up the camera, lens and charging the unit with dry nitrogen are eliminated. The miniature size of the cartridge decreases the future need for maintenance and increases the overall reliability of the pressurized unit.

Many models include 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 Esprit Enhanced units, which also includes an open collector auxiliary output to control external devices.

The systems are available with an input voltage of 24 VAC or with a selectable power source of 120/230 VAC. The Esprit Enhanced Series also has a power-up recovery mode that allows the user to specify what operation the system will resume whenever the power is cycled.

Electronic Image Stabilization (EIS)

Electronic image stabilization (EIS) is a feature of the camera that can help compensate for some frequencies of vibration. In all cases, care should be taken to ensure that any positioning system is mounted to a rigid location.

The default for EIS is OFF. The user can turn EIS ON if vibration is affecting image quality. Although EIS can reduce the impact of vibration on image quality, it cannot correct for all levels of vibration. Other measures should be taken to isolate the camera from the source of the vibration or to seek a more rigid mounting location.

PELCO ANALYTICS BEHAVIORS

The Esprit Enhanced Series includes nine user-configurable behaviors. The camera is capable of running up to three behaviors simultaneously; although, the number of behaviors is limited to the available processing power of the camera and the type of analytic being used.

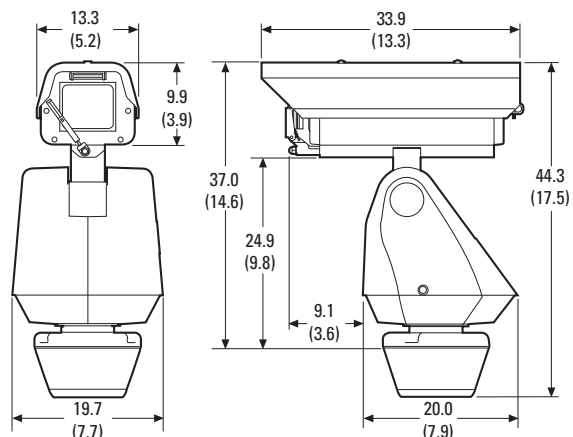
- **Abandoned Object:** Detects objects placed within a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows. An airport terminal is a typical installation for this behavior. This behavior can also detect objects left behind at an ATM, signaling possible card skimming.
- **Adaptive Motion Detection:** Detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a user-defined zone. This behavior is primarily used in outdoor environments with light traffic to reduce the number of false alarms caused by environmental changes.
- **AutoTracker:** Detects and tracks movement in the field of view. When the AutoTracker behavior is configured, the system automatically pans and tilts to follow the moving object until the object stops or disappears from the monitored area.
- **Camera Sabotage:** Detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed by spray paint, a cloth, or a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.
- **Directional Motion:** Generates an alarm in a high traffic area when a person or object moves in a specified direction. Typical installations for this behavior include an airport gate or tunnel where cameras can detect objects moving in the opposite direction of the normal flow of traffic or an individual entering through an exit door.
- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone longer than the user-defined time allows. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- **Object Counting:** Counts the number of objects that enter a defined zone. This behavior can be used to count the number of people at a store entrance/exit or inside a store where the traffic is light. This behavior is based on tracking and does not count people in a crowded setting.
- **Object Removal:** Triggers an alarm if an object is removed from a user-defined zone. This behavior is ideal for customers who want to detect the removal of high value objects, such as painting from a wall or a statue from a pedestal.
- **Stopped Vehicle:** Detects vehicles stopped near a sensitive area longer than the user-defined time allows. This behavior is ideal for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

TECHNICAL SPECIFICATIONS

CAMERA/OPTICS

Specification	SureVision 3.0 (ES523L)	
Sensor Type	1/2.8-inch Type Exmor CMOS Sensor	
Optical Zoom	30X	
Digital Zoom	12X	
Maximum Resolution	1920 x 1080	
Lens	f/1.6 ~ f/4.7, focal length 4.3 mm (wide) ~ 129.0 mm (tele)	
Horizontal Angle of View	63.7°(wide) - 2.3° (tele)	
Aspect Ratio	16:9	
Light Sensitivity	Color (33 ms)	0.03 lux
	Color (250 ms)	0.008 lux
	Mono (33 ms)	0.004 lux
	Mono (250 ms)	0.001 lux
Note: Sensitivity in lux for 90% reflectance, f/1.6 (wide angle), 50 dB gain at 30 IRE (30% of signal level) with Sensitivity Boost OFF; 4X improvement to sensitivity with Sensitivity Boost ON		
Day/Night Capabilities	Yes	
Shutter Range	1/1 ~ 1/10,000 sec	
Signal-to-Noise Ratio	>50dB	
IR Cut Filter	Yes	
Wide Dynamic Range	130 dB	
Iris Control	Auto iris with manual override	
Backlight Compensation	Yes	
Automatic Gain Control	Yes	
Active Noise Filtering	3D Noise Filtering	
Electronic Image Stabilization (EIS)	Yes (30X), No (20X)	

 VALUES IN PARENTHESES ARE INCHES; ALL OTHERS ARE CENTIMETERS.



SOFTWARE FEATURES

- Multilingual Menus (English, Spanish, Portuguese, Italian, German, French, Russian, Turkish, Arabic, Chinese, and Korean).
- 32 Window Blanks, Configurable in Size[†]
- Configurable Park with Actions
- Proportional Pan/Tilt Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom

[†] Using the maximum number of window blanks in a single view can affect camera performance and could interrupt certain camera functions.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 High, Main, or Base profiles 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, 15, 12.5, 10, 8.333, 7.5, 6, 5, 3, 2.5, 2, 1 (depending on the coding, resolution, and stream configuration)

Available Resolutions	Resolution			H.264 High Profile (IP GOP structure)	
	MPx	Width	Height	Aspect Ratio	Recommended Bit Rate (Mbps)
	2.07	1920	1080	16:9	3.50
	0.92	1280	720	16:9	2.90
	0.59	800	448	16:9	1.80
	0.52	640	352	16:9	1.15
	0.23	480	272	16:9	0.75
	0.06	320	176	16:9	0.35

NETWORK

Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, IPv6*, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, 802.1x (EAP), and NTCIP 1205
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup
Pelco System Integration	VideoXpert Endura 2.0 (or later) Digital Sentry 7.3 (or later)
Open API	Pelco API or ONVIF Profile S

MINIMUM SYSTEM REQUIREMENTS

Processor	Intel® Core™ i3 Processor, 2.4 GHz
Operating System	Windows® 7 (32-bit and 64-bit) with DirectX® 11, Windows XP Service Pack 3 with DirectX 9.0c, or Mac® OS X 10.4 (or later)
Memory	4 GB 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 8.0 (or later) or Firefox 3.5 (or later); Internet Explorer 8.0 (or later) is recommended for configuring analytics
Media Player	Pelco Media Player [†] or QuickTime® 7.6.5 for Windows XP and Windows 7; or QuickTime 7.6.4 for Mac OS X 10.4 (or later)

*Supports mixed IPv4 and IPv6 installations, but not IPv6-only deployments.

[†]Pelco Media Player is recommended for control, smoothness, and reduced latency as compared to QuickTime.

TECHNICAL SPECIFICATIONS

ANALYTICS

Required Systems for Pelco Analytics	WS5200 Advanced System Management Software on an Endura 2.0 (or later) system
Pelco Interface	The Pelco API can transmit behavior alarm data to third-party applications, available at pdn.pelco.com
Open API	

GENERAL

Construction	Die-cast, extruded and sheet aluminum; stainless steel hardware	
Finish	Gray polyester powder coat	
Operating Temperature	-45° to 60°C (-50° to 140°F) for outdoor applications or 74°C (165.2°F) absolute maximum ambient per NEMA TS-2; within two hours after power-up, the entire unit can de-ice and be operational from a temperature of -25°C (-13°F)	
Storage Temperature	-20° to 60°C (-4° to 140°F)	
Operating Humidity	Unit	
	Standard with IOP: 5 to 90% relative humidity (noncondensing)	
	Standard with IOC: 5 to 100% relative humidity (condensing)	
Weight	Pedestal Adapter	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)
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)
With Wiper and IOC	12.3 kg (27 lb)	13.6 kg (30 lb)

PRESSURIZED INTEGRATED OPTICS CARTRIDGE (IOC)

- Pressurized to 10 psig, Nominal (Sea Level, 21°C [70°F])
- Internal Sensor for Low Pressure Alarm
- Designed to IP67 Standards
- U.S. Patent D472,260

MECHANICAL

Variable Speed	0.1° to 100°
Preset Accuracy	±0.1°
Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +36° to -85°
Manual Pan/Tilt Speeds	
Pan	0.1° to 40°/sec manual operation
Tilt	0.1° to 30°/sec manual operation
Preset Speeds	
Pan	100°/sec
Tilt	30°/sec
Wind Speeds	
Full Motion Control	0-52 knots (60mph/97kph)
Limited Speed Control	52-78 knots (90mph/145kph)
Hold Position	78-96 knots (110mph/177kph)
Survives	96-130 knots (150mph/241kph)

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 70 VA per system
Heater and Defroster	Thermostatically controlled
Electrical Connections	
24 VAC	Screw terminals for power and open collector auxiliary output. RJ-45 connector for data
120/230 VAC	RJ-45, 2 power source connections made at mount location with wire splices and 1 ground wire splice; 2 wire splices for Aux 2 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 3 m (9.84 ft)

CERTIFICATIONS/RATINGS

- CE, Class A
- FCC, Class A
- KCC
- UL/cUL Listed
- C-Tick
- NEMA TS-2 (Temp.) para 2.2.7.3 - 2.2.7.7
- Meets NEMA Type 4X and IP66 Standards
- ONVIF Profile S

REPLACEMENT INTEGRATED OPTICS PACKAGE (IOP)

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

IOP-30L	Esprit Enhanced 1080p resolution SureVision 3.0 extreme low light and WDR camera and lens module, 30X replacement IOP module
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REPLACEMENT PRESSURIZED INTEGRATED OPTICS CARTRIDGE (IOC)

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

IOC-30L	Esprit Enhanced 1080p resolution SureVision 3.0 extreme low light and WDR camera and lens module, 30X replacement pressurized IOC module
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OPTIONAL ACCESSORIES

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

MODEL NUMBERS

MODELS

Enclosure Type	Pedestal Mount*		Wall Mount†	
	24 VAC	120/230 VAC	24 VAC	120/230 VAC
With Low Light IOP	ES523L-02N	ES523L-05N	ES523L-02W	ES523L-05W
With Low Light IOP and Wiper	ES523L-12N	ES523L-15N	ES523L-12W	ES523L-15W
With Low Light IOC and Wiper	ES523L-12NP	ES523L-15NP	ES523L-12WP	ES523L-15WP

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

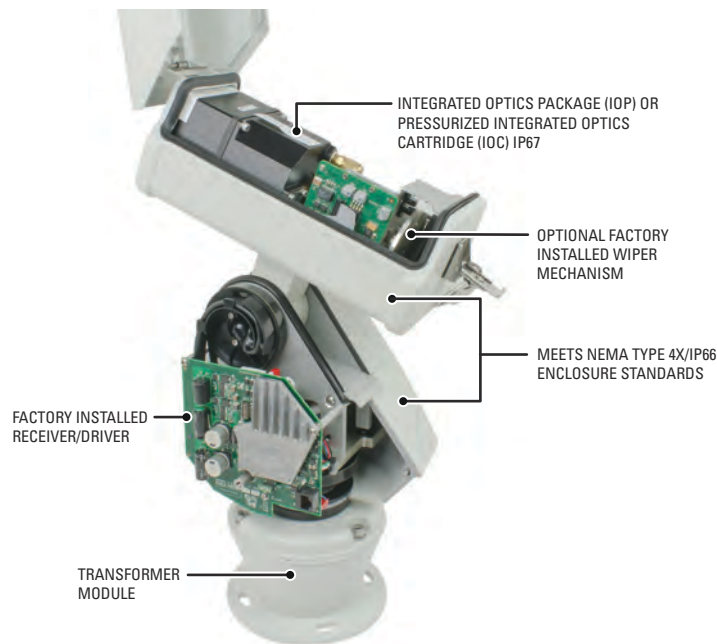
† Wall mount models include Esprit EWM wall mount. Optional mounting adapters for corner, pole, and parapet applications are available.

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



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