Esprit® Enhanced Series IP Positioning System

SUREVISION 3.0 CAMERAS IN STANDARD AND PRESSURIZED MODELS

Product Features

- Surevision 3.0 Technology, Including:
  - 130dB Wide Dynamic Range (WDR)
  - Advanced Low Light Down to 0.03 LUX, Anti-Bloom Technology, 3D Noise Filtering, Enhanced Tone Mapping
- Up to Full HD 1080p and up to 60 Images per Second
- Full Suite of Built-In Analytics Including AutoTracker, Adaptive Motion Detection, Abandoned Object, and More.
- Defog Mode Provides Three Levels of Fog Removal Within the Image for Improved Image Quality During Bad Weather Conditions
- Vivid Mode Can be Turned On/Off to Drastically Improve the Image Contrast and Color Saturation
- Electronic Image Stabilization (EIS)
- Pan/Tilt and Enclosure with Integrated Optics Package (IOP) or Pressurized Integrated Optics Cartridge (IOC)
- Dual Stream H.264 IP Video with Smart Compression
- Vari-Zoom IR Illuminator Option with 200 Meter Range
- Dual Mode Illumination Option with IR and White Light LED Banks
- 16 Preset Tours, 256 Presets, 32 Window Blanks, 8 Patterns, 8 Scans



- Integrated Window Wiper with Configurable Delay and Shut-Off (ES6230-1x Models)
- ONVIF Profile S, Profile G, and Profile T Conformant
- 360° Continuous Pan Rotation at 140° per Second
- 2 SFP Ports

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 Enhanced has 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 featuring 130dB of True Wide Dynamic Range and low light performance up to twenty times better than past Esprit models. 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 modification, the camera ensures that image quality is top-of-the-line, even on the darkest of nights.

Image Enhancement Features

Esprit Enhanced 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, Esprit Enhanced has had a full suite of built in video analytics, 32 window blanking privacy zones, and electronic image stabilization.

Standard IP Ethernet Connection and Integrated Transmission

Options via two small, form-factor pluggable transceivers (2 SFP ports). This may include Fiber, Ethernet over Coax, and UTP Extension. 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 helping enhance images on foggy or rainy days. 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 16 years, Esprit Enhanced 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
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International Standards Organization Registered Firm; ISO 9001 Quality System

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ESPRIT ENHANCED POSITIONING SYSTEM

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 80 degrees per second in manual pan mode, and 0.1 to 40 degrees per second in manual tilt. Pan preset and turbo speeds are 140 degrees per second. Tilt preset speed is 140 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 are strategically placed in the cartridge to monitor pressure, which is then displayed on the Web UI. 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.

Esprit Enhanced is available with 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, and sun shroud are standard features on Esprit Enhanced units, which also includes an open collector auxiliary output to control external devices.

The systems are available with a universal mains power supply. 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 two 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 idea for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

Illumination Options

Esprit Enhanced is available with options for IR illumination as well as Dual mode: IR and white light illumination. The vari-zoom IR illumination option dynamically matches the field of view of the camera and adapts in intensity to maintain consistent illumination across the range of zoom all the way out to 200 meters. The Dual Mode illumination option has both IR illumination as well as white light illumination that can be switched from one to the other with a click.

TECHNICAL SPECIFICATIONS

CAMERA/OPTICS

Specification		ES6230
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
IR Illumination Range		2 light option: Vari-Zoom up to 200 meter Dual Mode 1 light option: Vari-Zoom up to 100 meter
IR Wavelength		850nm
White Light Illumination Range		Dual Mode 1 light option: Adjustable up to 250 meter (>20% mean pixel value brightness increase in color mode)

SOFTWARE FEATURES

- 256 presets
- 16 tours
- ±0.1° preset accuracy
- Frame Scan (8 configurable scans)
- Patterns (8 recordable patterns, 5 minutes each)
- Multilingual Menus (English, Spanish, Portuguese, Italian, German, French, Russian, Turkish, Arabic, Chinese, and Korean)
- Password protection
- 32 Window Blanks, configurable in size, with 5 window blur options
- Configurable park with actions
- Proportional pan/tilt continually decreases pan/tilt speeds in proportion to depth of zoom
- Pelco analytics including nine user-configurable behaviors
- Image Defog modes

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 60, 50, 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	Maximum IPS	Recommended Bit Rate (Mbps)
2.07	1920	1080	16:9	60	8.00
2.07	1920	1080	16:9	30	6.05
0.92	1280	720	16:9	30	3.00
0.36	800	448	16:9	30	2.00
0.23	640	352	16:9	30	1.80
1.23	1280	960	4:3	30	3.80
0.49	800	608	4:3	30	2.00
0.31	640	480	4:3	30	1.45
0.08	320	240	4:3	30	0.50

NETWORK

Interface	Ethernet (100Base-TX) Auto MDI/MDI-X Auto-Negotiate
Ethernet Cabling Type	Cat5e or better
SFP Interface	Supports SFP Transceivers
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, IPv6*, SNMP v2c/v3, QoS, HTTP, HTTPS, SSH, SSL, SMTP, FTP, and 802.1x (EAP), 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, 802.1x, HTTPS
Software Interface	Web browser view and setup
Pelco System Integration	VideoXpert Enterprise and VideoXpert 2.0 or later Endura 2.0 (or later) Digital Sentry 7.3 (or later)
Open API	Pelco API or ONVIF Profile S, Profile G, and Profile Q
Mobile Application	Integrated to Pelco Mobile App
Video Motion Detection	Simple motion detection and camera sabotage
Local Storage	Capture 1–5–10 second video clips on camera sabotage, motion detection, or alarm input; record video continuously in the case of network outage with option to overwrite; access video through FTP protocol and ONVIF Profile G
SDXC Card	Addressable up to 2TB

TECHNICAL SPECIFICATIONS

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

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

ANALYTICS

Required Systems for Pelco Analytics

Pelco Interface	VideoXpert Enterprise and VideoXpert Pro 2.0 or later WS5200 Advanced System Management Software on an Endura 2.0 (or later) system
Open API	The Pelco API can transmit behavior alarm data to third-party applications, available at *pdn.pelco.com.* ONVIF Analytic Service Support for Analytic Events.

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) ambient for sustained system operation 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). Cold start from –40°C.
Impact Resistance	Metal housing meetings IK10, IOP window meets IK6, IOC window meets IK7
Wind	
Full Motion Control	0 to 65 knots (75 mph/120 kph)
Limited Speed Control	65 to 78 knots (90 mph/145 kph)
Survive	78 to 130 knots (150 mph/240 kph)
Storage Temperature	–20° to 60°C (–4° to 140°F)
Operating Humidity	
Unit	Standard with IOP: 10 to 90% relative humidity (noncondensing) Standard with IOC: 10 to 100% relative humidity (condensing)

Weight

Unit Weight	Without Illuminator	With Illuminator
Standard with IOP	12.83 kg (28 lb)	N/A
With Wiper and IOP	13.06 kg (29 lb)	15.86 kg (35 lb)
With Wiper and IOC	13.56 kg (30 lb)	16.36 kg (36 lb)
Shipping Weight	**Without Illuminator**	**With Illuminator**
Standard with IOP	16.7 kg (37 lb)	N/A
With Wiper and IOP	16.94 kg (37 lb)	21.93 kg (48 lb)
With Wiper and IOC	17.44 kg (38 lb)	22.43 kg (49 lb)

Effective Projected Area	Without Illuminator 193 inch^2	With Illuminator 243 inch^2

PRESSURIZED INTEGRATED OPTICS CARTRIDGE (IOC)

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

MECHANICAL

Variable Speed	0.1° to 140°
Preset Accuracy	±0.1°
Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +40° to –90°
Manual Pan/Tilt Speeds	
Pan	0.1° to 80°/sec
Tilt	0.1° to 40°/sec
Preset Speeds	140°/sec

ELECTRICAL

Input Voltage	HPoE, 24 VAC, 48 VDC Mains 100 to 240 VAC
Input Voltage Range	±10%

Max Power Consumption

	With Heaters	IR Models With Heaters	IR + White Light With Heaters
24 VAC	72 VA	—	—
HPoE	72 VA (HPoE 802.3bt Class 8 compliant)	—	—
48 VDC	72 VA	110 VA	120 VA
Mains	72 VA	110 VA	120 VA

Heater and Defroster	Thermostatically controlled
Electrical Connections	
24 VAC, 48 VDC, 100 to 240 VAC	Screw terminals for power
Alarms	Four; Detects open or closed alarm state
Input	3.5 VDC maximum, 3.5 mA maximum
Unsupervised	Detects open or closed alarm state
Supervised	Detects open and short alarm state with external 1k-ohm resistor
Relay Outputs*	Two; 30 VDC maximum, 1A maximum

*Wire length between Esprit and relay must be less than 3 m (9.84 ft). Pelco recommends the use of SPDs (Surge Protection Devices) on the relay lines. All relays are specified for signal only.

AUDIO

Input/Output	Line level/external microphone input; 600-ohm differential, 1Vp-p maximum signal level
Streaming	Embedded audio

TECHNICAL SPECIFICATIONS

CERTIFICATIONS/RATINGS

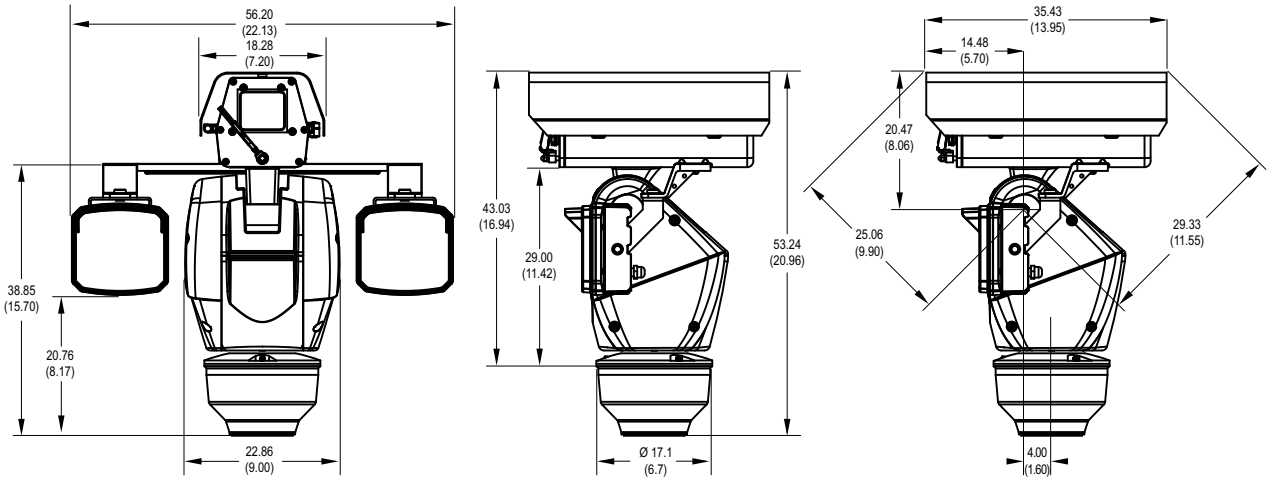
- CE, Class A
- FCC, Class A
- KCC
- UL/cUL Listed
- C-Tick
- NEMA TS-2 (Temp.) para 2.2.7.3 - 2.2.7.7
- Meets NEMA Type 4X and IP66 Standards
- ONVIF Profile S
- ONVIF Profile G
- ONVIF Profile T
- Shock test per IEC 60068-2-27 Ea
- Cisco® Medianet Media Services Proxy 2.0 compatible
- Vibration per IEC60068-2-6 Fc
- Shock test per IEC 60068-2-27 Ea
- Impact resistance of housing and glass was tested in accordance with IEC 62262

OPTIONAL ACCESSORIES

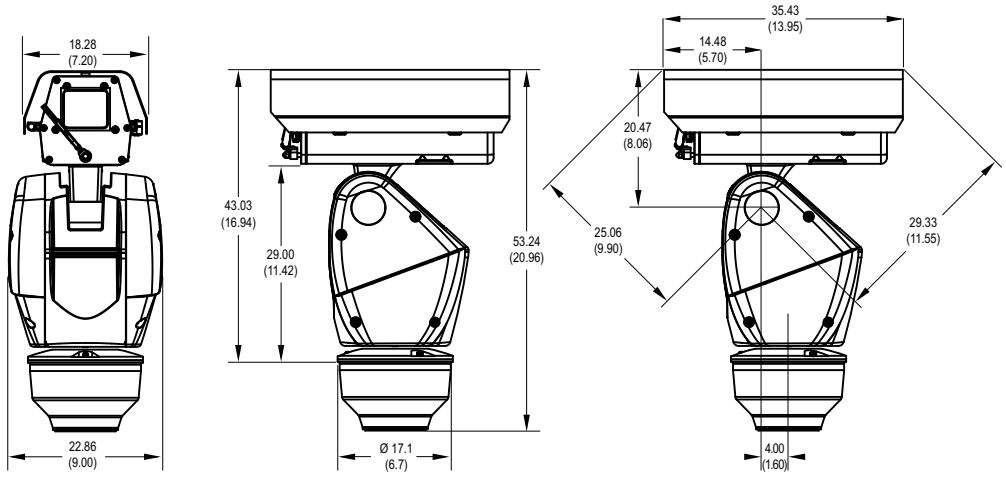
ES-BLADE-2	Package of 2 window wiper replacement blades
ES-BLADE-10	Package of 10 window wiper replacement blades

VALUES IN PARENTHESES ARE INCHES; ALL OTHERS ARE CENTIMETERS.

ESPRIT ENHANCED WITH ADAPTIVE IR



ESPRIT ENHANCED



MODEL NUMBERS

MODELS

Enclosure Type	Non IR		200m IR		IR + White Light	
	HPoE, 24 VAC, 48 VDC	100 to 240 VAC	48 VDC	100 to 240 VAC	48 VDC	100 to 240 VAC
Standard	ES6230-02	ES6230-05	—	—	—	—
With Wiper	ES6230-12	ES6230-15	ES6230-12-R2	ES6230-15-R2	ES6230-12-RW	ES6230-15-RW
Pressurized and Wiper	ES6230-12P	ES6230-15P	ES6230-12P-R2	ES6230-15P-R2	ES6230-12P-RW	ES6230-15P-RW

OPTIONAL MOUNTS AND ADAPTERS

EPP2	Esprit pedestal adapter; for use with PM20/ PM2010 pedestal mount
EWM	Esprit wall mount
EPM	Pole mount adapter for use with EWM wall mount
ECM101	Corner mount adapter for use with EWM wall mount
PM2000/PM2010	Pedestal mount with cable feedthrough. For use with Esprit systems with EPP pedestal adapter plate.

RECOMMENDED POWER SUPPLIES

ECPS-48VDC-5A	48 VDC indoor power supply
POE19O-BT Series	Single port IEEE 802.3BT Type 4, GbE, 90W 4-pairs PoE indoor midspan
WCS1-4	24 VAC Environmental Power Supply

⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov.
⚠ **ADVERTENCIA:** Cáncer y Daño Reproductivo - www.P65Warnings.ca.gov.
⚠ **AVERTISSEMENT:** Cancer et Troubles de l'appareil reproducteur - www.P65Warnings.ca.gov.

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