



## PRODUCT SPECIFICATION

# ES30C/ES31C Series Positioning System ESPRIT™ SYSTEM WITH IOP CAMERA AND OPTIONAL WIPER



IP66

U.S. Patents

#340,940

#5,224,675

### Product Features

- Receiver, Pan & Tilt, and Enclosure with an Integrated Optics Package (IOP)
- Auto Focus with Manual Override
- Programmable Camera Settings
- Auto Iris with Manual Override
- Integral Multi-protocol Receiver/Driver
- Easy to Install – Quick and Simple Electrical Connections
- Variable Speed Pan – 0.1 to 100 degrees/second with Proportional Pan
- 360 Degree Continuous Pan Rotation
- Zone Blanking – Allows up to eight zones (programmable in size) to be set to output blank video.
- Operational in 90 mph Wind Conditions; Can Withstand Wind Velocity Up to 130 mph
- Pan Preset Speed of 100 Degrees Per Second in 50 mph Winds and 50 Degrees Per Second in 90 mph Winds
- Tilt Range of +40 Degrees to -90 Degrees from Horizontal
- Preset Positioning, Patterns, Multiple Scan Modes
- Designed for Minimal Maintenance, No Gears to Adjust
- Lightweight Aluminum Construction
- Indoor/Outdoor Applications

The **ES30C** and **ES31C** are innovative additions to the successful product line of Esprit™ Series Integrated Positioning Systems. The **ES30C** and **ES31C** not only combine a receiver, pan & tilt, and enclosure in a single, easy-to-install system, they also include an Integrated Optics Package (IOP). The Integrated Optics Package contains an auto-focus camera and lens module with programmable features.

For a wide range of applications, the **ES30C** and **ES31C Series** feature a choice of three different IOP cameras: a color camera (470 TVL) with a 128X zoom lens (16X optical, 8X electronic), a high-resolution camera with LowLight™ color technology and 176X zoom lens (22X optical, 8X electronic), and a high-resolution color/black & white camera with an infrared cut filter and 72X zoom lens (18X optical, 4X electronic).

A powder-coated, aluminum construction makes the **ES30C** and **ES31C** ideal for either indoor or outdoor applications. The system has an absolute operating temperature range of -50° to 140°F (-45° to 60°C). Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of -13°F (-25°C).



ESPRIT IOP SYSTEM WITH WIPER  
(SHOWN WITH WALL MOUNT AND POLE ADAPTER)

The **ES31C 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 programmed 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 **ES30C** and **ES31C** units. All units also include an open collector auxiliary output that functions for two seconds before deactivating.

The **ES30C** and **ES31C Series** variable pan and tilt speeds range from 0.1 to 40 degrees per second in manual pan mode and 0.1 to 20 degrees per second in manual tilt. Pan preset and turbo speeds are 100 degrees per second in wind speeds of 50 mph and 50 degrees per second in the 90-mph wind-speed profile. Tilt preset speed is 30 degrees per second. The **ES30C** and **ES31C** are capable of 360 degrees of continuous pan rotation. The tilt range allows for horizontal viewing of +40 to -90 degrees. There are 64 preset positions with a preset accuracy of one-quarter degree programmable through system software.

The systems are available with an input voltage of 24 VAC or with a selectable power source of 120/230 VAC. The **ES30C** and **ES31C** also have a power-up recovery mode that allows the user to specify what operation the system will resume whenever the power is cycled.



International Standards Organization Registered Firm ISO 9001 Quality System

## TECHNICAL SPECIFICATIONS

### PRODUCT FEATURES

- Deterrent Surveillance
- Integral Multi-Protocol Receiver/Driver
- Integral Camera Enclosure
- Variable Speed 0.1-100 Degrees/Second
- 360 Degrees Continuous Pan Rotation
- Quick and Easy Installation
- +40° to -90° Tilt Range
- Operational in 90 mph Winds, Can Withstand Wind Velocity Up to 130 mph
- Pan Preset Speed of 100 Degrees Per Second in 50 mph Winds and 50 Degrees Per Second in 90 mph Winds
- Meets NEMA 4X and IP66 Standards – Pan & Tilt and Enclosure
- Variable Scan Speeds (1-40 Degrees/Second)
- Translator Boards for Selected Competitive Protocols
- Easy to Install – Quick and Simple Electrical Connections
- 24 VAC or 120/230 VAC Selectable
- Designed for Minimal Maintenance, No Gears to Adjust
- Full Continuous-Duty Warranty

### SOFTWARE/HARDWARE

- 64 Presets with Labels
- Auto, Frame and Random Scan
- Programmable Power-up Mode
- Programmable Park
- Programmable Manual Pan & Tilt Limit Stops
- Programmable Scan Pan & Tilt Limit Stops
- Patterns
- Proportional Pan/Tilt
- Eight Zones (programmable in size) Can Be Labeled with Up to 20 Characters Each
- Up to Eight Zones (programmable in size) Can Be Set to Output Blank Video
- 10-Inch Integrated Enclosure with Pre-Assembled, IOP Camera
- Sun Shroud, Heater/Window Defroster, and Insulation All Standard
- One Auxiliary Output
- Integrated Window Wiper with Programmable Delay and Shut-Off (ES31C Models)

### ALL CAMERAS

- Auto Focus with Manual Override
- Auto Iris with Manual Override
- Programmable Settings
- AC Line Lock
- NTSC/PAL

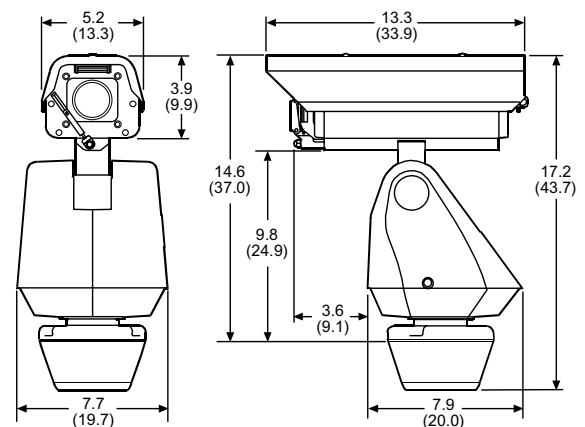
### ELECTRICAL

Input Voltage	24, 120, or 230 VAC, 50/60 Hz; switch selectable for 120/230 VAC inputs	
Input Voltage Range	±10%	
Power Consumption	Maximum 50 vA per system	
Heater and Defroster	Thermostatically controlled	
Electrical Connections	Two power source connections made at mount location with wire splices and one ground wire splice; one BNC receptacle and four wire splices at mount location for RS-422 D and P protocols; two 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)	
Video Coaxial Cable		
Max. Wiring Distances	<u>Cable Type*</u>	<u>Maximum Distance</u>
	RG59/U	750 feet (229 m)
	RG6/U	1,000 feet (305 m)
	RG11/U	1,500 feet (457 m)

\* Minimum cable requirements:  
75 ohms impedance; all-copper center conductor;  
all copper braided shield with 95% braid coverage

### MECHANICAL

Pan Movement	360° Continuous pan rotation
Vertical Tilt	Unobstructed +40° to -90°
Variable Pan/Tilt Speed	
Pan	0.1° to 40°/sec variable-speed operation, 100°/sec Turbo
Tilt	0.1° to 20°/sec variable-speed operation
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)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS;  
ALL OTHERS ARE IN INCHES.

ES30C SERIES DIMENSION DRAWING

## TECHNICAL SPECIFICATIONS

### GENERAL

Construction	Die-cast, extruded and sheet aluminum; stainless steel hardware
Finish	Gray polyester powder coat
Viewing Window	0.23" (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 two 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

Weight	With Pedestal Adapter	With Wall Mount
Unit		
Standard w/IOP	20 lb (9.0 kg)	22 lb (9.9 kg)
With Wiper and IOP	21 lb (9.5 kg)	23 lb (10.4 kg)
Shipping		
Standard w/IOP	25 lb (11.3 kg)	28 lb (12.6 kg)
With Wiper and IOP	26 lb (11.7 kg)	29 lb (13.1 kg)

### CERTIFICATIONS/RATINGS

- ◆ CE, Class B (all models)
- ◆ UL listed to Standard 2044 (NTSC models)
- ◆ cUL listed to CSA Standard 22.2 No. 1-94 (NTSC models)
- ◆ FCC, Class B (NTSC models)
- ◆ Meets NEMA 4X and IP66 standards

### CAMERA/OPTICS

	Color (16X)	Color (22X)	Color/Black & White (18X)
Signal Format	NTSC, PAL	NTSC, PAL	NTSC, PAL
Scanning System	2:1 interlace	2:1 interlace	2:1 interlace
Image Sensor	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD
Effective pixels			
NTSC	768 (H) x 494 (V)	768 (H) x 494 (V)	768 (H) x 494 (V)
PAL	752 (H) x 582 (V)	752 (H) x 582 (V)	752 (H) x 582 (V)
Horizontal Resolution			
NTSC	470 TV lines	>470 TV lines	>470 TV lines
PAL	460 TV lines	>460 TV lines	>460 TV lines
Lens	f/1.6 (f = 3.9-63 optical, 16X optical zoom, 8X electronic zoom)	f/1.6 (f = 4-88 optical, 22X optical zoom, 8X electronic zoom)	f/1.4 (f = 4.1-73.8 optical, 18X optical zoom, 4X electronic zoom)
Horizontal Angle of View	45° at 3.9mm wide zoom; 3° at 63mm telephoto zoom	43° at 4mm wide zoom; 2° at 88mm telephoto zoom	42° at 4.1mm wide zoom; 2.5° at 73.8mm telephoto zoom
Focus	Automatic with manual override	Automatic with manual override	Automatic with manual override
Sensitivity	1 lux at 1/60-second shutter speed	.07 lux at 1/2-second shutter speed	.2 lux at 1/4-second shutter speed ( <b>color</b> ) .2 lux at 1/60-second shutter speed ( <b>B&amp;W</b> ) .013 lux at 1/4-second shutter speed ( <b>B&amp;W</b> )
Sync System	AC line lock, phase adjustable via remote control®	AC line lock, phase adjustable via remote control®	AC line lock, phase adjustable via remote control®
White Balance	Automatic with manual override®	Automatic with manual override®	Automatic with manual override®
Shutter Speed	Automatic (electronic iris)/manual	Automatic (electronic iris)/manual	Automatic (electronic iris)/manual
NTSC	1/60 - 1/10,000®	1/2 - 1/30,000®	1/4 - 1/10,000®
PAL	1/50 - 1/10,000®	1/2 - 1/30,000®	1/3 - 1/10,000®
Iris Control	Automatic with manual override®	Automatic with manual override®	Automatic with manual override®
Gain Control	Automatic with manual override®	Automatic with manual override®	Automatic with manual override®
Video Output			
NTSC	.714V ± .07V (100 IRE ±10 IRE)	.714V ± .07V (100 IRE ±10 IRE)	.714V ± .07V (100 IRE ±10 IRE)
PAL	.7V ± .07V	.7V ± .07V	.7V ± .07V
Signal to Noise Ratio	>46 dB	50 dB	50 dB

® Manual control of camera setup functions can be done with CM6700, CM6800, CM8500, CM9500, CM9740, CM9760, KBD200, KBD300, and MPT9500 controllers, but not with CM7500, MPT9000 or KBD9000 controllers.



## MODEL NUMBERS

### MODELS

Model		Format	Pedestal Mount		Wall Mount	
			24 VAC	120/230 VAC	24 VAC	120/230 VAC
<b>16X Color</b>	Standard	NTSC PAL	ES30C16-2N ES30C16-2N-X	ES30C16-5N ES30C16-5N-X	ES30C16-2W ES30C16-2W-X	ES30C16-5W ES30C16-5W-X
	With Wiper	NTSC PAL	ES31C16-2N ES31C16-2N-X	ES31C16-5N ES31C16-5N-X	ES31C16-2W ES31C16-2W-X	ES31C16-5W ES31C16-5W-X
<b>22X Color</b>	Standard	NTSC PAL	ES30C22-2N ES30C22-2N-X	ES30C22-5N ES30C22-5N-X	ES30C22-2W ES30C22-2W-X	ES30C22-5W ES30C22-5W-X
	With Wiper	NTSC PAL	ES31C22-2N ES31C22-2N-X	ES31C22-5N ES31C22-5N-X	ES31C22-2W ES31C22-2W-X	ES31C22-5W ES31C22-5W-X
<b>18X Color/ B&amp;W</b>	Standard	NTSC PAL	ES30CBW18-2N ES30CBW18-2N-X	ES30CBW18-5N ES30CBW18-5N-X	ES30CBW18-2W ES30CBW18-2W-X	ES30CBW18-5W ES30CBW18-5W-X
	With Wiper	NTSC PAL	ES31CBW18-2N ES31CBW18-2N-X	ES31CBW18-5N ES31CBW18-5N-X	ES31CBW18-2W ES31CBW18-2W-X	ES31CBW18-5W ES31CBW18-5W-X

### REPLACEMENT INTEGRATED OPTICS PACKAGE (IOP CAMERA) MODULES

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

ESIOPC16	Esprit high resolution color camera and lens module, 16X, NTSC format
ESIOPC16-X	Same as ESIOPC16 except PAL format
ESIOPC22	Esprit high resolution color camera and lens module, 22X NTSC format
ESIOPC22-X	Same as ESIOPC22 except PAL format
ESIOPCBW18	Esprit high resolution color/B&W camera and lens module, 18X, NTSC format
ESIOPCBW18-X	Same as ESIOPCBW18 except PAL format

### RECOMMENDED MOUNTS

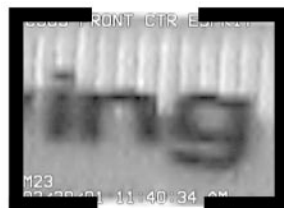
Esprit Series	Includes mounts for wall, pedestal, corner, and pole applications. (See C238 spec)
PM2000/ PM2010	Pedestal mount with cable feedthrough. For use with Esprit systems with pedestal adapter plate. (See C255 spec)



WIDE ANGLE (4 mm)



22X (80 mm)



176X (8X Digital)

### RELATED PRODUCTS

TXB Series	Translator boards for AD Manchester, Philips (Burle), and Vicon® protocols. (See C1492 spec)
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### RECOMMENDED POWER SUPPLIES

MCS Series	24 VAC Indoor transformer (See C653 and C655 specs)
WCS Series	24 VAC Weatherproof transformer (See C654 spec)

### RECOMMENDED CONTROLS

CM6700	Microprocessor-based switcher/controller. (See C523 spec)
CM6800	Microprocessor-based, cross-point video switcher. (See C1515 spec)
CM9500	Microprocessor-based cross-point video switcher. (See C500 spec)
CM9740	Microprocessor-based cross-point video switcher. (See C1508 spec)
CM9760	Microprocessor-based cross-point video switcher. (See C540 spec)
MPT9500	Microprocessor-based transmitter/controller. (See C535 spec)
MPT9000	Coaxitron® control. (See C550 spec)
MX4000 Series	Genex® Series multiplexer. (See C1920, C1921, C1922, C1923, and C1995 specs)
NET100 Series	PelcoNet™ transmission system via networks. (See C1977 spec)

### RECOMMENDED KEYBOARD CONTROLS

(For use in Direct Mode operation only)	
KBD200	Desktop keyboard, multi-speed PTZ control. (See C526 spec)
KBD300	Desktop keyboard, vari-speed PTZ control. (See C527 spec)

**Note:** System keyboards require a remote keyboard wiring kit (KBDKIT) for direct mode operation; allows two-wire control of up to 16 daisy-chained receivers (or Esprit systems). Keyboards output Pelco P protocol at 4800 baud.

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