



Spectra® Pro Series 2 PTZ Camera

High-Speed PTZ, 30x, Full HD, WDR, Low-Light Performance

Product Features

- Up to Full HD 1080p
- Up to 60 Images per Second (ips)
- H.265, H.264, and MJPEG Video Encoding
- Tilt Range +1° to -90° Degrees
- Low Light Down to 0.1 lux
- Up to 120 dB Wide Dynamic Range (WDR)
- Professional Analytics Suite including:
 - Loitering Detection,
 - Object Counting,
 - Motion Detection,
 - Camera Sabotage,
 - and Audio Detection
- Pelco's Smart Compression Technology
- Power Over Ethernet (802.3at/bt), 24 VAC, 48 VDC
- Electronic Image Stabilizer (EIS)
- IK10
- Up to 2 TB Edge Storage with micro SDHC/SDXC Card
- 3-Year Warranty and Support



Cost Effective

Pelco's Spectra® Pro Series 2 is an ideal, cost-effective solution for common applications. The Spectra Pro Series 2 is easy to order, easy to install and ready to get you focused on what matters most in your organization.

Full High Definition Camera

Spectra Pro Series 2 is ideal for common applications such as commercial, corrections, education, gaming and healthcare requiring a broad coverage areas with fewer cameras, Spectra Pro Series assures coverage of large areas without the need for PTZ management by live operator. Low latency and smooth PTZ, the camera is easy to control with a joystick for high performance tracking of objects. It provides a wide angle with 360° continuous pan rotation to cover expansive areas with 2MP and 30x optical zoom to get details.

Embedded Features

Included in all models are built in video analytics (e.g. Professional Analytics Suite including: Loitering Detection, Object Counting, Motion Detection, Camera Sabotage, and Audio Detection). Spectra Pro Series 2 also allows for up to 8 configurable privacy zones. White Balance modes including Auto or

Manual are available for overcoming difficult lighting conditions day and night. Spectra Pro Series 2 supports up to 2 TB of onboard local storage (not supplied) that is easily accessible through the ONVIF Profile G protocol or FTP.

Video Encoding

Spectra Pro Series 2 provides three methods of video encoding: H.265 Main profile, H.264 High/Main/Baseline profiles and MJPEG. Latest generation H.265 compression lowers bandwidth and storage requirements by up to 70% while retaining resolution and image quality and critical information for forensic purposes.

Intuitive Design

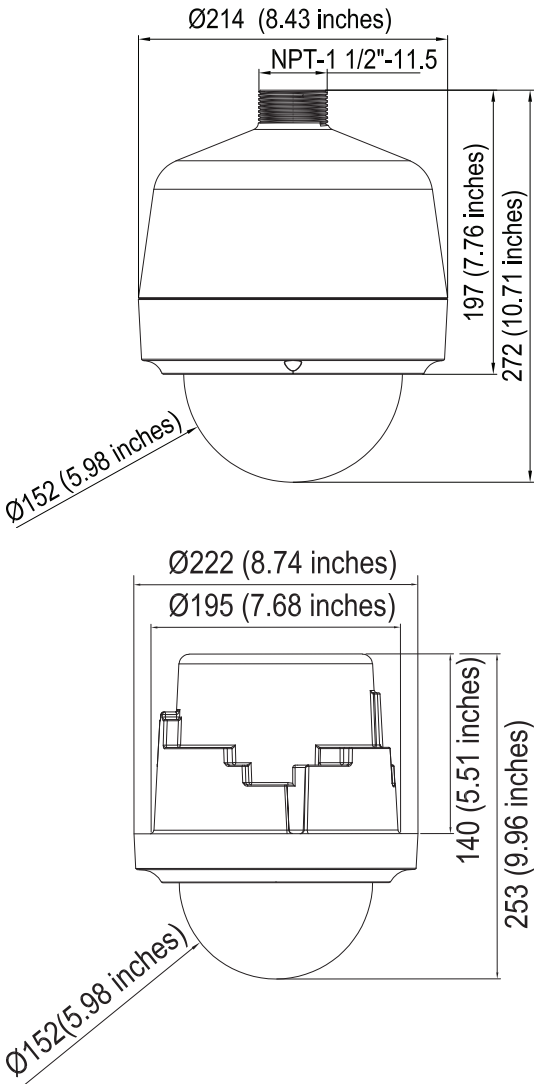
Spectra Pro Series 2 features the same ease of installation and maintenance that you have come to expect from Spectra as well as flexible power options to fit into existing or new infrastructure.

VMS Integration

Spectra Pro Series 2 easily connects to Pelco VideoXpert and provides limited support of legacy systems such as Endura 2.0 (or later), and Digital Sentry 7.3 (or later).

Pelco endeavors to be the most open and integrated camera provider in the industry and as a part of that effort Spectra Pro Series 2 is integrated with a long and ever-growing list of 3rd party software and Video Management Systems (VMS).

Back Box Features




Environmental Pendant

- Environmental Pendant Available in White Finish, RAL 9003
- Aluminum Construction, IK10 Rated Housing and Nylon Bubble
- Meets Type 4X
- Meets IP66, IP67
- 1 1/2-inch NPT Mounting Thread
- Includes Heater and Blower
- Clear or Smoked Dome
- Sustained Operating Temperature – 40° to 50°C (–40°F to 122°F)

Indoor In-Ceiling

- Single Back Box for Suspended or Hard Ceiling Applications
- Aluminum Construction, IK10 Rated Housing and Nylon Bubble
- Requires 152.4 mm (6.0 in) Space Above Ceiling
- Minimum Ceiling Thickness 12.7 mm (0.50 in.); Maximum 38.1 mm (1.5 in.)
- Suitable for Use in Environmental Air Handling Spaces
- Black Finish with White Trim Ring, RAL 9003
- Clear or Smoked Dome

 **Note:** Values in parentheses are inches; all others are millimeters.

Camera/Optics

| Specification | Value |
|---|---|
| Sensor Type | 1/2.8-inch CMOS Sensor |
| Optical Zoom | 30X |
| Digital Zoom | 12X |
| Maximum Resolution | 1920 x 1080 |
| Lens | f/1.6 ~ f/4.4, focal length 4.5 mm (wide) ~ 135 mm (tele) |
| Angle of View | |
| Horizontal | 59.8° (wide) ~ 2.34° (tele) |
| Vertical | 40.5° (wide) ~ 1.48° (tele) |
| Diagonal | 67.8° (wide) ~ 2.77° (tele) |
| Aspect Ratio | 16:9 |
| Light Sensitivity | |
| Color (33 ms) | 0.1 lux |
| Color (125 ms) | 0.025 lux |
| Mono (33 ms) | 0.05 lux |
| Mono (125 ms) | 0.01 lux |
| Note: Sensitivity in lux for 90% reflectance, f/1.6 (wide angle), 45 dB gain at 30 IRE (30% of signal level) | |
| Day/Night Capabilities | Yes |
| Shutter Range | 1/4 ~ 1/30,000 sec |
| Signal-to-Noise Ratio | >50 dB |
| IR Cut Filter | Yes |
| True Wide Dynamic Range | Up to 120 dB Max; 100 dB per IEC 62676-5 |
| Iris Control | Auto Iris with Manual Override |
| Backlight Compensation | Yes |
| Automatic Gain Control | Yes |
| Active Noise Filtering | 3D Noise Filtering |
| Digital Image Stabilization (DIS) | Yes |
| Scanning | Progressive Scanning System |

Software Features

- 256 presets
- 16 tours
- 4 patterns
- Field of View scan
- $\pm 0.1^\circ$ preset accuracy
- Multilingual menus (English, Spanish, Portuguese, Italian, German, French, Russian, Turkish, Arabic, Simplified Chinese, and Korean)
- Password protection
- 16 window blanks, configurable in size
- “Auto Flip” feature rotates camera 180° at bottom of tilt travel
- Configurable park with actions
- Proportional pan/tilt continually decreases pan/tilt speeds in proportion to depth of zoom

Pelco Pro Analytics Suite

Spectra Professional range cameras feature the Pro suite of video analytics including Motion Detection, Loitering Detection, Camera Sabotage, Audio Detection, and Object Counting.

- **Simple Motion Detection** algorithms allow the camera to record or send an alarm when there is motion detected in a selected zone or with the entire scene.
- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone too long. This behavior is effective in real-time notification of suspicious behavior.
- A **Camera Sabotage** alarm is triggered if the lens is obstructed or when the camera is repositioned.
- **Audio Detection** allows user to define an audio intensity threshold to trigger surrounding audio.
- **Object Counting** counts the number of moving objects passing through the defined virtual lines.

Video

General Video Specifications

| Item | Specification |
|----------------|--|
| Video Encoding | H.264 High, Main or H.265 Main, MJPEG |
| Video Streams | Up to 3 simultaneous streams; the second and third stream is variable based on the setup of the primary stream |
| Frame Rate | Up to 60, 50, 30, 25, 20, 16.67, 15, 12.5, 10, 7.5, 5, 3, 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 | 10 |
| 2.07 | 1920 | 1080 | 16:9 | 60 | 7 |
| 0.92 | 1280 | 720 | 16:9 | 60 | 5.1 |
| 0.59 | 1024 | 576 | 16:9 | 60 | 5.0 |
| 0.36 | 960 | 540 | 16:9 | 60 | 4.9 |
| 0.23 | 640 | 360 | 16:9 | 60 | 2.35 |
| 0.06 | 320 | 180 | 16:9 | 60 | 1.4 |

Network

| Item | Specification |
|--------------------------|--|
| Supported Protocols | TCP/IP, UDP/IP (Unicast, Multicast IGMP), ARP, ICMP, UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, IPv6, SNMP v2c/v3, QoS, HTTP, HTTPS, SSH, TLS/SSL, SMTP, FTP, and 802.1x (EAP) |
| Users | |
| Unicast | Up to 5 simultaneous users depending on resolution settings (2 guaranteed streams) |
| Multicast | Unlimited users H.264 or H.265 |
| Security Access | Password protected. Admin password required for initial login. |
| Software Interface | Web browser view and setup |
| Pelco System Integration | VideoXpert |
| | Endura 2.0 (or later), limited support |
| | Digital Sentry 7.3 (or later), limited support |
| Open API | Pelco API or ONVIF Profile G, Profile S, and Profile T |
| Mobile Application | Integrated to Pelco Mobile App |

| Item | Specification |
|-----------------|--|
| Video Analytics | Simple Motion Detection, Loitering Detection, Camera Sabotage, Audio Detection, and Object Counting |
| Local Storage | Micro SDHC/SDXC slot (card not included), up to 2 TB; Capture 1–5–10 second video clips on camera sabotage, simple 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 |

Cybersecurity

Pelco's Spectra Pro Series 2 cameras implement several cybersecurity measures to protect device access as well as data transport including credential setup for device access, authentication, Https using TLS1.2, AES encryption with 256 bit keys, denial of access to shell, 802.1X, camera firewall with whitelist/blacklist address support, digital certificate support, TLS 1.2 2048 RSA key pairs, and X.509 v3 digital certificates with SHA256 signature hash.

Minimum System Requirements

| Item | Specification |
|-------------|--|
| Web Browser | Google Chrome 61.0 (or later), Internet Explorer® 8.0 (or later) or Firefox 3.5 (or later) |

Analytics

Required Systems for Pelco Analytics

| Item | Specification |
|-----------------|--|
| Pelco Interface | VideoXpert and Digital Sentry, WS5200 Advanced System Management Software on an Endura 2.0 (or later) system. Limited support for Digital Sentry and Endura. |
| Open API | The Pelco API can transmit behavior alarm data to third-party applications, available at pdn.pelco.com |

Pelco's Smart Compression Technology

Pelco's Smart Compression Technology lowers bandwidth and storage requirements by up to 70%, while reducing storage requirements. Our technology allows the user to make informed optimization between storage savings and image quality.

Pelco's Smart Compression Technology dynamically analyzes motion occurring within live video in real-time, to intelligently compress the information you don't need, while retaining details with clear quality in the areas that are important in the scene. By enabling Dynamic GOP, an added feature of Smart Compression, the number of I-frames are automatically reduced in scenes with low motion. Based on the complexity of scenes and motion occurring, such as a store room that has limited entry and exit, up to 70% bandwidth savings can be achieved.

General

| Item | Specification |
|--------------------------------|---|
| Construction | Aluminum Construction, IK10 Rated Housing and Nylon Bubble |
| Cable Entry (Back Box) | Through 1.5-inch NPT (pendant mount), 0.75-inch conduit fitting (indoor in-ceiling) |
| Effective Projected Area (EPA) | 43.5 in ² (.028 m ²) without mount 93.5 in ² (.060 m ²) with IWM mount |

Weight (Approximate)

| Type | Unit | Shipping |
|-----------------------|-------------------|--------------------|
| Environmental Pendant | 3.12 kg (6.89 lb) | 4.69 kg (10.35 lb) |
| Indoor In-Ceiling | 2.79 kg (6.17 lb) | 4.41 kg (9.73 lb) |

Alarm

| Item | Specification |
|--------------|--|
| Unsupervised | Detects open or closed alarm state |
| Input | Four alarms, 3.5 VDC maximum, 3.5 mA maximum |
| Relay Output | One output, normally open, ±30 V maximum, 150 mA maximum |

Audio

| Item | Specification |
|--------------|--|
| Input/Output | Line level/external microphone input; 1Vp-p maximum signal level |
| Streaming | Embedded audio |

Operating Temperature*

| Temperature | Environmental Pendant | In-Ceiling Indoor |
|-------------------------|-------------------------------|-------------------------------|
| Maximum ¹ | 50°C (122°F) | 50°C (122°F) |
| Minimum ¹ | -40°C (-40°F) | -10°C (14°F) |
| Cold Start ² | -30°C (-22°F) | -10°C (14°F) |
| Storage Temperature | -20°C to 60°C (-4°F to 140°F) | -20°C to 60°C (-4°F to 140°F) |

* Assumes no wind chill factor.

¹ For outdoor applications.

² Cold starts within 20 minutes at specified temperature for environmental units.

Operating Humidity

| Item | Specification |
|-----------------------|------------------------------|
| Environmental Pendant | 10 to 100% RH |
| In-Ceiling Indoor | 10 to 90% RH (Noncondensing) |

Mechanical

| Item | Specification |
|------------------------|---|
| Variable Speed | 0.1° to 100°/sec (manual pan speed) |
| Preset Accuracy | Pan $\pm 0.1^\circ$, Tilt $\pm 0.05^\circ$ |
| Vertical Tilt | +1° to -90° degrees |
| Maximum Pan Speed | Up to 400° per second |
| Maximum Tilt Speed | Up to 200° per second |
| Manual Pan/Tilt Speeds | |
| Pan | 0.1° to 100°/sec manual operation |
| Tilt | 0.1° to 50°/sec manual operation |
| Preset Speeds | |
| Pan | 400°/sec |
| Tilt | 200°/sec |

Electrical

| Item | Specification |
|--|--|
| Ports | RJ-45 connector for 100Base-TX Auto MDI/MDI-X Autonegotiate/manual setting |
| Cabling Type | Cat5e or better for 100Base-TX |
| Input Voltage | 20 to 32 VAC; 24 VAC normal 42 to 53 VDC; 48 VDC normal |
| Input Power | |
| 24 VAC | 0.95A (19VA) Indoor and Environmental without heaters. No pan or tilt. 1.40A (27VA) Indoor and Environmental without heaters. Pan and tilt active. 2.00A (40VA) Environmental with heaters. Pan and tilt active. |
| 48 VDC | 0.40A (16W) Indoor and Environmental without heaters. No pan or tilt. 0.77A (21W) Indoor and Environmental without heaters. Pan and tilt active. 1.00A (35W) Environmental with heaters. Pan and tilt active. |
| 802.3bt (Environmental) 802.3at (Indoor) | 0.40A (16W) Indoor and Environmental without heaters. No pan or tilt. 0.50A (21W) Indoor and Environmental without heaters. Pan and tilt active. 1.00A (35W) Environmental with heaters. Pan and tilt active. |

Certifications/Ratings

- CE (Class A)
- FCC (Class A)
- ICES-003 (Class A)
- UL/cUL Listed
- UL/IEC/EN 60950-1, 60950-22, 62368-1
- EN 50121-4
- IEC/EN 62262 IK10
- Environmental Models:
 - IEC/EN 60529 (IP66, IP67)
 - Type 4X
- KC
- NOM
- RCM
- EAC*
- BIS
- IEC 62676-5 Data specifications and image quality performance for camera devices
- ONVIF Profile S, Profile G, and Profile T Conformant

*At the time of this publication, certifications are pending.

System Model Numbers

| Model Number | Resolution | Optical Zoom | Color | Type | Bubble | Description |
|--------------|------------|--------------|-------|-----------------------|--------|--|
| P2230L-EW0 | 2 MP | 30x | White | Environmental Pendant | Smoked | Spectra Pro Series 2, Environmental Pendant, Smoked with White Trim Ring |
| P2230L-EW1 | 2 MP | 30x | White | Environmental Pendant | Clear | Spectra Pro Series 2, Environmental Pendant, Clear with White Trim Ring |
| P2230L-FW0 | 2 MP | 30x | Black | Indoor In-Ceiling | Smoked | Spectra Pro Series 2, Indoor In-Ceiling, Smoked with White Trim Ring |
| P2230L-FW1 | 2 MP | 30x | Black | Indoor In-Ceiling | Clear | Spectra Pro Series 2, Indoor In-Ceiling, Clear with White Trim Ring |

Recommended Mounts

| Part Number | Mount |
|---------------------------------------|---|
| IWM-SW, IWM24-BK | Wall mount, white (RAL 9003) or black (RAL 9017) finish; can be adapted for corner, parapet, or pole application |
| IWM24-SW, IWM24BK | Wall mount, with integral 24 VAC, 100 VA transformer; white (RAL 9003) or black (RAL 9017) finish; can be adapted for corner, parapet or pole application |
| WMVE-SW | Environmental wall mount (white, RAL 9003); can also be mounted using a pole |
| PP350-SW/PP351-SW, PP450-SW, PP451-SW | Parapet; wall/rooftop mount |

Power Supplies

| Item | Specification |
|----------------------------|--|
| WCS1-4 Model (WCS Series) | Outdoor single 24 VAC camera power supply, power cord not included |
| ECPS-48VDC-5A | 48 VDC indoor power supply |
| POE190-BT | 90 W HPoE 802.3BT single port injector power cord not included |



a Motorola Solutions Company



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