



by Schneider Electric

INSTALLATION

IXE Series Network Box Cameras



Sarix® Cameras with SureVision
Technology

C2271M-A (9/14)

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Important Notices

LEGAL NOTICE

SOME PELCO EQUIPMENT CONTAINS, AND THE SOFTWARE ENABLES, AUDIO/VISUAL AND RECORDING CAPABILITIES, THE IMPROPER USE OF WHICH MAY SUBJECT YOU TO CIVIL AND CRIMINAL PENALTIES. APPLICABLE LAWS REGARDING THE USE OF SUCH CAPABILITIES VARY BETWEEN JURISDICTIONS AND MAY REQUIRE, AMONG OTHER THINGS, EXPRESS WRITTEN CONSENT FROM RECORDED SUBJECTS. YOU ARE SOLELY RESPONSIBLE FOR INSURING STRICT COMPLIANCE WITH SUCH LAWS AND FOR STRICT ADHERENCE TO ANY/ALL RIGHTS OF PRIVACY AND PERSONALTY. USE OF THIS EQUIPMENT AND/OR SOFTWARE FOR ILLEGAL SURVEILLANCE OR MONITORING SHALL BE DEEMED UNAUTHORIZED USE IN VIOLATION OF THE END USER SOFTWARE AGREEMENT AND RESULT IN THE IMMEDIATE TERMINATION OF YOUR LICENSE RIGHTS THEREUNDER.

REGULATORY NOTICES

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits of a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

KOREAN CLASS A EMC

이 기기는 업무용 (A 급) 전자파 적합기기로서 판매자 또는 사용자는 이 점을 주의하시길 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.

VIDEO QUALITY CAUTION

FRAME RATE NOTICE REGARDING USER-SELECTED OPTIONS

Pelco systems are capable of providing high quality video for both live viewing and playback. However, the systems can be used in lower quality modes, which can degrade picture quality, to allow for a slower rate of data transfer and to reduce the amount of video data stored. The picture quality can be degraded by either lowering the resolution, reducing the picture rate, or both. A picture degraded by having a reduced resolution may result in an image that is less clear or even indiscernible. A picture degraded by reducing the picture rate has fewer frames per second, which can result in images that appear to jump or move more quickly than normal during playback. Lower frame rates may result in a key event not being recorded by the system.

Judgment as to the suitability of the products for users' purposes is solely the users' responsibility. Users shall determine the suitability of the products for their own intended application, picture rate and picture quality. In the event users intend to use the video for evidentiary purposes in a judicial proceeding or otherwise, users should consult with their attorney regarding any particular requirements for such use.

OPEN SOURCE SOFTWARE NOTICE

This product includes certain open source or other software originated from third parties that is subject to the GNU General Public License (GPL), GNU Library/Lesser General Public License (LGPL) and different and/or additional copyright licenses, disclaimers, and notices.

The exact terms of GPL, LGPL, and some other licenses are provided to you with this product. Please refer to the exact terms of the GPL and LGPL at <http://www.fsf.org> (*Free Software Foundation*) or <http://www.opensource.org> (*Open Source Initiative*) regarding your rights under said license. You may obtain a complete corresponding machine-readable copy of the source code of such software under the GPL or LGPL by sending your request to digitalsupport@pelco.com, the subject line should read *Source Code Request*. You will then receive an email with a link for you to download the source code.

This offer is valid for a period of three (3) years from the date of the distribution of this product by Pelco.

WARRANTY STATEMENT

For information about Pelco's product warranty and thereto related information, refer to www.pelco.com/warranty.

Introduction

The Sarix® IXE Series IP cameras feature SureVision technology that seamlessly delivers advanced low-light performance with wide dynamic range (WDR) and anti-bloom technologies that operate simultaneously. They are part of Pelco's Enhanced (E) range of cameras, providing industry-leading image quality and performance.

The IXE Series box camera is easy to install, offers flexible mounting options, and uses a standard Web browser for easy remote setup and administration.

The IXE Series easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later), Digital Sentry® version 7.3 (or later), and DX4700/DX4800 hybrid video recorders. The camera is also conformant with ONVIF Profile S for connection with third-party software. Pelco offers an application programming interface (API) and software developer's kit (SDK) for interfacing with Pelco's IP cameras.

This document describes the installation and initial setup procedures to begin operating the camera. For more information about operating your camera, refer to the operation manual specific to the product.

NOTE: For additional information about product documentation in English and other languages, go to www.pelco.com/sarix and navigate to the IXE Series Web page.

MODELS

IXES1	Sarix 0.5 MPx with SureVision, low-light, WDR, day-night, network camera with built-in Pelco analytics
IXE11	Sarix 1.0 MPx (720p) with SureVision, low-light, WDR, day-night, network camera with built-in Pelco analytics
IXE21	Sarix 2 MPx (1080p) with SureVision, low-light, WDR, day-night, network camera with built-in Pelco analytics
IXE31	Sarix 3 MPx (1080p) with SureVision, low-light, WDR, day-night, network camera with built-in Pelco analytics

RECOMMENDED MOUNT

C10-UM	Universal camera mount
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RECOMMENDED ENCLOSURES

EH1512	Indoor/environmental, IP66
EH3512	Indoor/environmental, IP66

RECOMMENDED LENSES

13M2.2-6	MPx lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	MPx lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	MPx lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	MPx lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Note: Pelco megapixel (MPx) lenses have been designed and tested to deliver optimal image quality for the IXE Series camera. The use of a standard definition lens or any other lens not tested by Pelco on an IXE Series MPx camera could limit the resolution of the camera, creating poor image quality.

OPTIONAL ACCESSORIES

IPCT01	Pelco IP camera tester*
ALM-1	External alarm accessory
POE1AT-US	1-port PoE midspan with US power cord
POE1AT-EU	1-port PoE midspan with European power cord

*Contact Pelco Product Support for more information about the use of the Pelco IP camera tester with cameras.

Getting Started

Before installing your device, thoroughly familiarize yourself with the information in the installation section of this manual.

NOTES:

- Pelco recommends connecting the device to a network that uses a Dynamic Host Configuration Protocol (DHCP) server to address devices.
- Do not use a network hub when configuring the network settings for the device.
- To ensure secure access, place the device behind a firewall when it is connected to a network.

PARTS LIST

Qty	Description
1	Camera
1	4-pin connector for Audio port
1	5-pin connector for Alarm/Relay port
2	MAC address labels (extra)
1	IXE Series Mini Dome IP Camera Installation manual
1	Important Safety Instructions
1	Resource disc
1	Accessory hardware kit:
1	1/4-20 x 3/8-inch bolt
1	1/4-inch flat washer
1	1/4-inch split washer

USER-SUPPLIED PARTS LIST

In addition to the standard tools and cables required for a video security installation, you will need to provide the following items:

Qty Description

1	CS mount megapixel lens (refer to <i>Recommended Lenses</i> on page 7)
1	SD card, 32 GB SanDisk Extreme® PLUS microSDHC™ UHS-I
1	Mounting hardware (refer to <i>Recommended Mount</i> on page 7)
1	RJ-45 connector
1	Cat5 (or higher) cable
1	24 AWG, 4-wire multiconductor cable (if using alarm or relays)
1	24 AWG, 4-wire multiconductor cable (if using line-in and line-out audio)

PRODUCT LABEL

The product label lists the model number, date code, serial number, and Media Access Control (MAC) address. This information might be required for setup. The product label is located on the top of the camera.

Product Overview

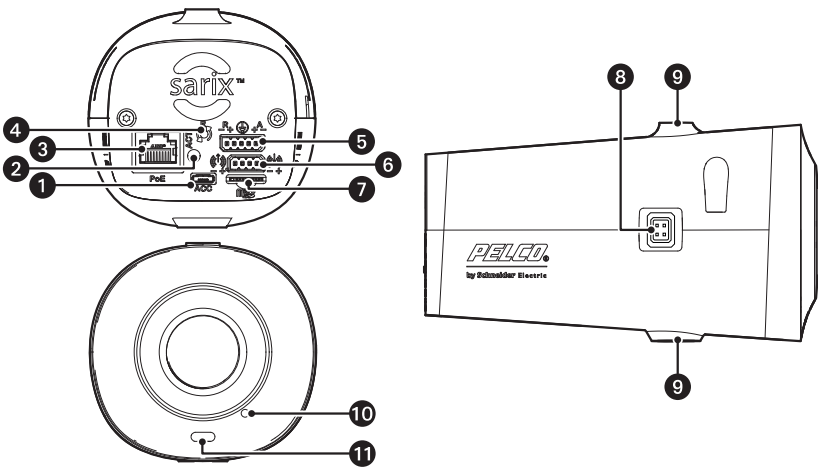


Figure 1. Camera Connections and Features

- 1 **Accessory Port:** Connects with compatible Pelco accessories.
- 2 **Ethernet Activity/Link LED:** Flashes yellow to indicate that data is being transmitted or received by the camera.
- 3 **RJ-45 Network Port:** Connects the camera to the IP network. Also supplies power to the camera (PoE), through the same connector.
- 4 **Reset Button:** Reboots the camera or restores the camera's factory default settings. This button is recessed. Using a small tool, such as a paper clip, press and release the reset button once to reboot the camera. Press and hold the reset button for 10 seconds to restore the camera to the factory default settings.
- 5 **Alarm/Relay Port:** Connects to alarms and relays.
- 6 **Audio Port:** Connects to audio in/out.
- 7 **Micro SD Slot:** Connects to local storage. To ensure reliable local storage, it is recommended that you use a 32 GB SanDisk Extreme® PLUS microSDHC™ UHS-I card. You must use a new SD card. If the card has previously been used or reformatted, the local storage feature may not function properly.
- 8 **Auto Iris Lens Connector:** Controls the amount of light allowed through the lens. Insert the 4-pin connector from the DC drive auto iris lens into this connector.
NOTE: Auto focus can be controlled from the camera's user interface.
- 9 **Threaded Mounting Holes (top and bottom):** Connects the camera to the recommended mount.
- 10 **Built-in Microphone:** When enabled, receives external audio input. Use the audio port to connect to an external microphone.
- 11 **Power LED:** Glows solid amber and then flashes green during the configuration sequence; glows solid green after the sequence is complete. The LED can be disabled.
If this LED glows red, contact Pelco Product Support at 1-800-289-9100 (USA and Canada) or +1-559-292-1981 (international) for assistance.

For cable terminations, refer to *Wiring* on page 12.

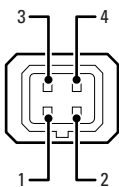
Installation



CAUTION: Hot Surface! Always turn off power and allow the unit to cool prior to handling. Failure to follow these instructions can result in injury.

NOTE: Pelco megapixel (MPx) lenses have been designed and tested to deliver optimal image quality for the IXE Series camera. The use of a standard definition lens or any other lens not tested by Pelco on an IXE Series MPx camera could limit the resolution of the camera, creating poor image quality.

1. Install the lens.
 - a. Remove the cover from the lens mount.
 - b. Tighten the lens onto the lens mount. Be careful to prevent dust from entering the space between the lens and the imager. If necessary, use clean, compressed air to remove any foreign matter (refer to the instructions shipped with the lens). Make sure the lens does not touch the camera imager when installed.
 - c. Connect the auto iris lens to the 4-pin connector located on the side of the camera. Refer to Figure 2 for the pin connections for the auto iris lens connector.



Pin	DC (AID) Auto Iris Lens
1	Control coil negative (-)
2	Control coil positive (+)
3	Drive coil positive (+)
4	Drive coil negative (-)

Figure 2. Lens Pin Connections

2. Install the camera on the mount in the desired location (refer to the Installation/Operation manual for the recommended mount). The camera can be attached to the mount from either the top or bottom threaded mounting hole, depending on the type of camera mount used in your installation.
3. Connect the wiring to the camera as follows:
 - a. Connect the network cable to the RJ-45 network port on the back of the camera. Refer to *Ethernet Wiring Requirement for PoE* on page 12 for more information.
 - b. Connect the Micro USB cable and optional multiconductor cables as follows:
 - **If using a Pelco accessory:** Connect the Micro B USB cable that is supplied with the Pelco accessory to the accessory port at the rear of the camera.
 - **(Optional) If using alarms or relays:** Connect the 24 AWG, 4-wire multiconductor cable to the 5-pin removable connector (supplied), and then insert the connector back into the rear of the camera. This cable is for alarms and relays.
 - **(Optional) If using audio:** Connect the 24 AWG, 4-wire multiconductor cable to the 4-pin removable connector (supplied), and then insert the connector back into the rear of the camera. This cable is for audio line-in and line-out.

4. Apply power to the camera. The camera will complete a configuration sequence. The LED at the front of the camera will glow solid amber during the configuration sequence and then blink green for several minutes. The LED will turn solid green after the sequence is complete.

NOTE: If the camera is not connected to a DHCP server and DHCP is enabled, the configuration sequence can take several minutes to complete.

5. View the camera image by finding the camera's IP address on a Web browser. If you do not know the camera's IP address, install the Pelco Device Utility software (version 2.3 or later) available at www.pelco.com. The utility will locate the assigned name, IP address, and MAC address of the camera.
6. Adjust the view angle of the camera by moving the mount to the desired position.
7. Focus the lens:
 - a. Center the auto back focus mechanism by using the lens auto focus controls in the user interface.
 - b. Adjust the lens zoom and focus manually to the desired field of view (refer to the instructions shipped with the lens).
 - c. Adjust the lens auto back focus by using the focus controls in the user interface.

Wiring

ETHERNET WIRING REQUIREMENT FOR POE

Connect a Cat5 cable or higher (Cat5e, Cat6) cable (not supplied) to the RJ-45 network connector. The 8-pin port includes video over Ethernet, and PoE for the camera. PoE (IEEE 802.3af, Class 3) injects power over the same cabling that carries the network data, eliminating the need for a separate power supply. This simplifies the installation and operation of the camera without affecting network performance.

NOTE: The camera will autosense and configure itself to use either a crossover cable or a straight cable.

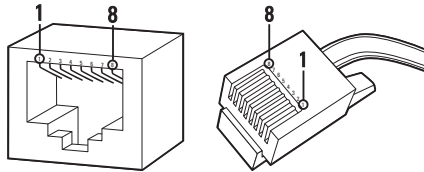


Figure 3. Cable Pin Descriptions

Table A. Ethernet with PoE Modes A and B

PoE Mode A		PoE Mode B	
Pin	Function	Pin	Function
1	TX+, PoE 1-2	1	TX+
2	TX-, PoE 1-2	2	TX-
3	RX+, PoE 3-4	3	RX+
4	Not used	4	PoE 1-2
5	Not used	5	PoE 1-2
6	RX-, PoE 3-4	6	RX-
7	Not used	7	PoE 3-4
8	Not used	8	PoE 3-4

ALARM/RELAY PORT

The 5-pin Alarm/Relay port has the following pins and pin assignments.

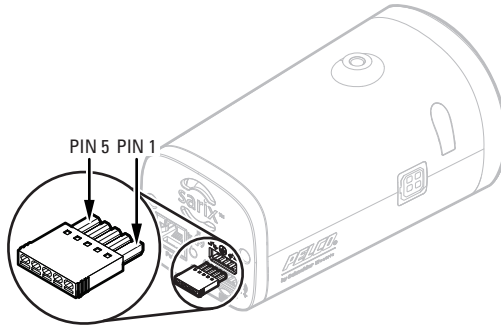


Figure 4. Alarm/Relay Port Pins

Table B. Pin Descriptions for Alarm/Relay Port

Pin	Function
1	Alarm Ground
2	Alarm Input
3	Ground
4	Relay N.O.
5	Relay Return

AUDIO PORT

The 4-pin Audio port has the following pins and pin assignments.

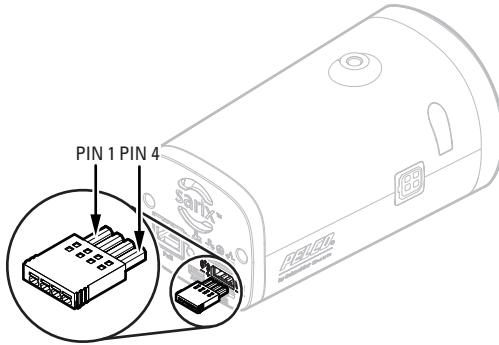


Figure 5. Audio Port Pins

Table C. Pin Descriptions for Audio Port

Pin	Function
1	Audio Out-
2	Audio Out+
3	Audio In-
4	Audio In+

IP Address Settings

If the camera is connected to a Dynamic Host Configuration Protocol (DHCP) network and DHCP is set to On, the server automatically assigns an IP address to the camera. The default setting for the camera is DHCP On. To set the camera's IP address manually, set DHCP to Off.

NOTES:

- If the camera is not connected to a DHCP server but DHCP is set to On, the default IP address 192.168.0.20 on subnet mask 255.255.255.0 is automatically assigned to the camera. After the first camera is connected and assigned the default IP address, the system automatically looks for other cameras on the auto IP address system and assigns IP addresses in sequential order as required. For example, if three cameras are connected to a network without a DHCP server, the first camera is assigned address 192.168.0.20, the second camera is assigned address 192.168.0.21, and the third camera is assigned address 192.168.0.22.
- Contact your network administrator to avoid network conflicts before setting/changing the camera's IP address.
- If you do not know the camera's IP address, install Pelco Device Utility software (version 2.3 or later) available at www.pelco.com. The utility will locate the assigned name, IP address, and MAC address of the camera.

Logging On to the Camera

After logging on to the camera, you can view video from the Web user interface.

1. Open the Web browser.
2. Type the camera's IP address in the browser address bar.

NOTE: If you do not know the camera's IP address, you can locate it using the Pelco Device Utility software (version 2.3 or later).

3. Click the Log In button in the navigation bar; a dialog box opens.
4. Type your user name and password.

NOTE: If you are logging on to the camera as the administrator for the first time, the default user name and password are **admin** (all lowercase). For security purposes, be sure to change the password after you log on for the first time.

5. Click Log In.

Specifications

CAMERA

Imaging Device	1/3-inch
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	3 MPx (2048 x 1536) 2 MPx (1920 x 1080) 1 MPx (1280 x 1024) 0.5 MPx (800 x 600)
Signal-to-Noise Ratio	>60 dB
Auto Back Focus	Yes
Electronic Shutter Range	1 ~ 1/77,000 sec
True Wide Dynamic Range	Up to 100 dB*
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >20 dB
Color (33 ms)	0.1 lux
Color (500 ms)	0.005 lux
Mono (33 ms)	0.05 lux
Mono (500 ms)	0.0013 lux
Day/Night Capabilities	Yes
Mechanical IR Cut Filter	Yes, (ON/OFF/AUTO selectable), with different set points on lux

*Sensor level is not inclusive of SureVision image processing.

MECHANICAL

Lens Mount	CS mount; adjustable
Auto Iris Type	DC drive
Camera Mount	1/4 in. UNC-20 screw; top and bottom of camera housing

ELECTRICAL

Network Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Accessory Port	Micro B USB connector for Pelco accessories
Cable Type	Cat5 or better for 100Base-TX
Input Power	PoE (IEEE 802.3af, Class 3)
Power Consumption†	9 W nominal
Current Consumption	350 mA maximum
Local Storage	32 GB SanDisk Extreme® PLUS microSDHC™ UHS-I card
Alarm	
Input	10 VDC maximum, 5 mA maximum
Output	0 to 15 VDC maximum, 75 mA maximum
Relay Output	32 VDC maximum, 150 mA maximum

†Does not include optional accessories connected to accessory port.

ENVIRONMENTAL

Operating Temperature	-10° to 50°C (14° to 122°F)
Storage Temperature	-10° to 60°C (14° to 140°F)
Operating Humidity	20 to 80%, RH noncondensing
Storage Humidity	20 to 80%, RH noncondensing

AUDIO

Streaming	Bidirectional: full or half duplex
Input/Output	Line level/external microphone input; 600-ohm differential, 1 Vp-p max. signal level; built-in microphone
Compression	G.711 PCM 8 bit, 8 kHz mono at 64 kbit/s

VIDEO

Video Streams	Multiple simultaneous streams with up to 2 different configurations plus service stream; the secondary stream is variable based on the setup of the primary stream
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Available Resolutions Two configurable streams as follows:.

Camera Model	MPx	Mbps	Width	Height	Aspect Ratio		
3 MPx	3.0	9.2	2048	1536	4:3		
	2 MPx	1.9	5.7	1600	1200	4:3	
		1 MPx	1.2	3.8	1280	960	4:3
	0.5 MPx		0.5	2	800	608	4:3
			0.3	1.5	640	480	4:3
	0.08	0.5	320	240	4:3		
3 MPx and 2 MPx	1080p	6	1920	1080	16:9		
	1 MPx	720p	2.9	1280	720	16:9	
		0.5 MPx	0.5	1.7	800	448	16:9
			0.2	1.2	640	352	16:9
	0.06	0.4	320	176	16:9		

Note: Default mbps values are based on High profile (30 ips; default IP GOP length).

Frame Rate	Up to 30, 25, 15, 12.5, 10, 5, 1 (depending on the coding, resolution, and stream configuration)
Video Encoding	H.264 High, Main, or Base profiles; and MJPEG
Bit Rate Control	Constrained variable bit rate (CVBR), constant bit rate (CBR), and variable bit rate (VBR) with target range
Service Stream	JPEG stream; the aspect ratio will be consistent with the independent streams

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, ARP, ICMP, and 802.1x (EAP)

NOTE: IPv6 protocol supports mixed IPv4 and IPv6 installations, but not IPv6-only deployments.

Users

Unicast Up to 20 simultaneous users depending on the resolution settings
Multicast Unlimited users H.264

Security Access Password protected

Software Interface Web browser view and setup

INTEGRATION

Pelco System Integration Endura 2.0 (or later);
Digital Sentry 7.3 (or later)

Open API Pelco API or ONVIF Profile S

Mobile Application Integrated with Pelco Mobile Application

PHYSICAL

Construction

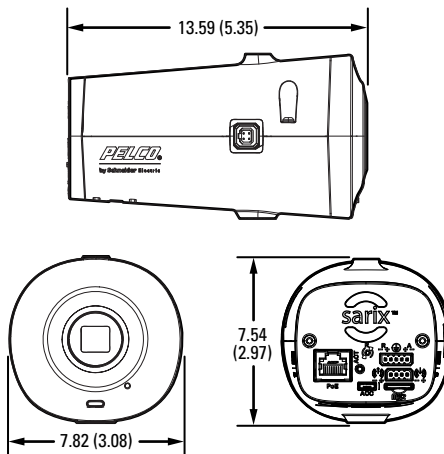
Material Aluminum
Finish Silver powder paint

Unit Weight 0.52 kg (1.16 lb)

Product box dimensions (approximate) 12.7 x 19.69 x 12.7 cm
(5.0" D x 7.75" W x 5.0" H)



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



REVISION HISTORY

Manual #	Date	Comments
C2271M	9/13	Original version.
C2271M-A	9/14	Added SD card requirements to support local storage.

PELCO

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