



## **Spectra Enhanced Series 7 Domes**



**Dome (S7230L) Models**



# Contents

---

Contents .....	3
Important Notices .....	7
Legal Notice .....	7
Regulatory Notices .....	7
Warranty Statement .....	7
Video Quality Caution .....	7
Open Source Software Notice .....	7
Description .....	10
Getting Started .....	10
System Model Numbers .....	11
Component Model Numbers .....	11
Recommended Mounts .....	11
Dome Camera Models .....	12
Supplied Parts List: In-Ceiling system .....	12
User-Supplied Parts List: In-Ceiling System .....	12
Supplied Parts List: Pendant system .....	12
User-Supplied Parts List: Pendant .....	12
Product Overview .....	13
Installation Methods .....	13
Installation (Back Box) .....	14
Installing the Back Box (In-Ceiling) .....	14
Installing the Back Box (Pendant) .....	15
Installation (Dome Drive) .....	17
Installing the Dome Drive (In-Ceiling) .....	17
Installing the Dome Drive (Pendant) .....	18
Installation (Lower Dome) .....	20
Installing the Lower Dome (In-Ceiling/Indoor) .....	20
Installing the Lower Dome (In-Ceiling/Environmental) .....	20
Installing the Lower Dome (Environmental Pendant) .....	21
Ethernet Wiring Requirement for POE 802.3bt .....	23
Accessing the Camera .....	24
Supplemental Resources .....	24
Pelco Troubleshooting contact information .....	24



# 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.

### CAN ICES-3 (A)/NMB-3(A)

## 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.

## WARRANTY STATEMENT

For information about Pelco's product warranty and thereto related information, refer to [www.pelco.com/warranty](http://www.pelco.com/warranty).

## 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](mailto: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.

**NOTE: This product is intended to be supplied by a Listed Power Adapter or DC power source marked "L.P.S." (or "Limited Power Source"), rated 48Vdc, 1.9A, 24Vac (50/60 Hz), 4.8A or POE BT, 1.3A, Tma = 60 degree C, and the altitude of operation = 2000m. If you need further assistance with purchasing the power source, please contact to PELCO, INC for further information.**



# Description

---

The Spectra Enhanced Series 7 high speed IP PTZ dome cameras provide top tier image quality, performance, and intelligent embedded features for state-of-the-art surveillance solutions. There are several different form factors including in-ceiling and pendant domes with different configurations (e.g. indoor, environmental). All environmental models feature a robust design with aluminum construction and an IK10 rated housing and polycarbonate bubble. The environmental models feature worry-free use in harsh environments with IP66, IP67, and Type 4X ratings, and a wide range of operating temperatures.

The Spectra Enhanced Series 7 dome camera is easy to install, offers flexible mounting options, and uses a standard Web browser for easy remote setup and administration.

The Spectra Enhanced Series 7 dome camera easily connects to Pelco IP and hybrid systems such as VideoXpert and Digital Sentry version 7.3 (or later). The camera also conforms with ONVIF Profile S, Profile G, Profile Q, and Profile T 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 Spectra Enhanced Series 7 dome product documentation in English and other languages, go to [www.pelco.com](http://www.pelco.com) and navigate to the Spectra Enhanced Series 7 website.

## GETTING STARTED

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



## SYSTEM MODEL NUMBERS

Type	Back Box Color	Lower Dome	System Resolution	Model Number	Description
In-ceiling, Indoor	Black	Smoked	2 MP 30X	S7230L-FW0	Spectra Enhanced Dome 1080p
		Clear	2 MP 30X	S7230L-FW1	Spectra Enhanced Dome 1080p
In-ceiling, Environmental	Black	Smoked	2 MP 30X	S7230L-YB0	Spectra Enhanced Dome 1080p
		Clear	2 MP 30X	S7230L-YB1	Spectra Enhanced Dome 1080p
Pendant, Environmental	White	Smoked	2 MP 30X	S7230L-EW0	Spectra Enhanced Dome 1080p
		Clear	2 MP 30X	S7230L-EW1	Spectra Enhanced Dome 1080p
Pendant, Environmental	Black	Smoked	2 MP 30X	S7230L-EB0	Spectra Enhanced Dome 1080p
		Clear	2 MP 30X	S7230L-EB1	Spectra Enhanced Dome 1080p

## COMPONENT MODEL NUMBERS

Back Box		High Definition (HD) Lower Dome*		Dome Drive	
B7-F	In-ceiling Indoor	LD7F-0	Indoor, White, Smoked, 1080p	D7230L	30X
B7-F-E	In-ceiling Environmental	LD7F-1	Indoor, White, Clear, 1080p		
B7-PW-E	Pendant Environmental, White	LD7PB-0	Environmental, Black, Smoked, 1080p		
B7-PB-E	Pendant Environmental, Black	LD7PB-1	Environmental, Black, Clear, 1080p		

\* Use the pendant lower domes with the environmental in-ceiling and environmental pendant back boxes.

## RECOMMENDED MOUNTS

Pendant Domes	
IWM-SW	Wall mount, white finish; can be adapted for corner, parapet, or pole application
IWM24-SW Series	Wall mount, with integral 24 VAC, 100 VA transformer; white finish; can be adapted for corner, parapet, or pole application
PP350/PP351	Parapet wall/roof mount
SWM Series	Compact wall mount, white or black finish; can be adapted for corner or pole applications

# Dome Camera Models

---

## SUPPLIED PARTS LIST: IN-CEILING SYSTEM

### Qty Description

- 1 Back box with mounting hardware
- 1 Lower dome (includes trim ring and bubble)
- 1 Dome drive
- 1 Mounting template
- 1 18-pin terminal block
- 1 2-pin terminal block
- 1 Metal plug and nut
- 1 Safety bracket
- 1 Rubber grommet (Environmental In-Ceiling models only)
- 1 Installation manual
- 1 Important Safety Instructions document

## USER-SUPPLIED PARTS LIST: IN-CEILING SYSTEM

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 Safety chain
- 1 Conduit fitting and nut
- 1 Cat5e (or higher) cable

## SUPPLIED PARTS LIST: PENDANT SYSTEM

### Qty Description

- 1 Pendant back box
- 1 Lower dome (includes trim ring and bubble)
- 1 Dome drive
- 1 18-pin terminal block
- 1 2-pin terminal block
- 1 Waterproof gland
- 1 Anti-seize lubricant
- 1 Installation manual
- 1 Important Safety Instructions document

## USER-SUPPLIED PARTS LIST: PENDANT

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 Pendant Mount
- 1 Cat5e (or higher) cable

# Product Overview

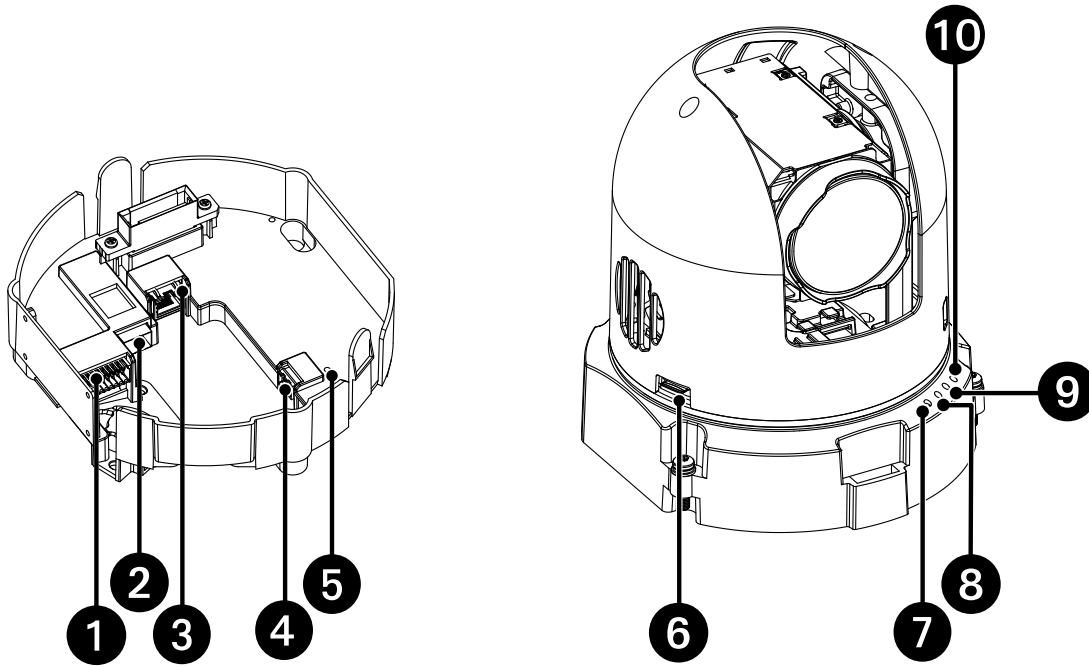


Figure 1. Spectra Enhanced Series 7 Dome Camera

#	Connection/Feature	Description
1	Alarm, Relay, and Audio In/Out	An 18-pin connector with four alarms, two relay, and audio in and out.
2	SFP Port	Connects the SFP module. The port will auto-detect either 100 Mbps or 1 Gbps speeds. Ensure the same speed SFP is being used on the other side of the link.
3	RJ-45 Network Port	Connects the camera to the IP network and supplies power to the camera through the network using Power over Ethernet (802.3bt). 802.3bt must be used to power all applications.
4	Power Terminal	The port is used to connect with either a 48 VDC or 24 VAC power supply. Use 16 to 20 AWG gage wire. <b>NOTE:</b> There is no polarity for the power connection.
5	Power LED	This LED glows solid green when the power is on. The LED is off when there is no power.
6	Micro SD Card Slot	Slot for removable Micro SD Card for flash memory.
7	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 for 1 second to reboot the camera. Press and hold the Reset button for 10 seconds to restore the camera to the factory default settings.
8	Status LED	Powers up solid amber. Blinks green when motors start to calibrate and during boot-up. Blinks amber during a firmware update. Solid green during normal operation (if LEDs are ON in the user interface).
9	Ethernet Link/Activity LED	LED blinks green while the camera boots and link is active. After boot completed the LED is OFF.
10	SFP/Activity LED	LED blinks green while the camera boots and link is active. After boot completed the LED is OFF.

## INSTALLATION METHODS

You can install the Spectra Enhanced Series dome system using one of the following methods:

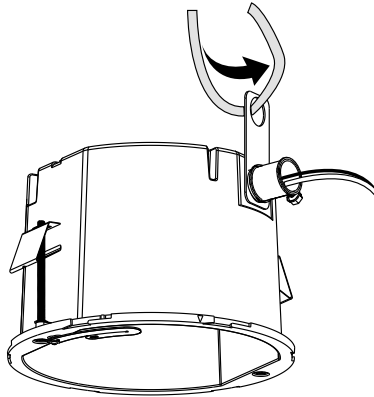
- Installation in a suspended ceiling or a fixed ceiling.
- Installation using a pendant mount (not supplied).

# Installation (Back Box)

---

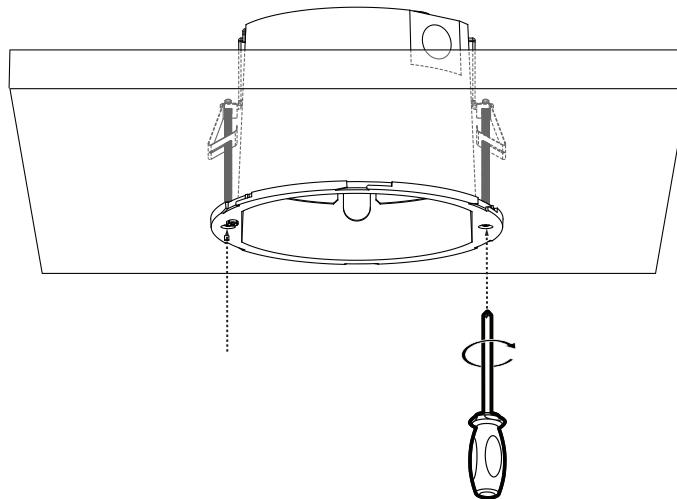
## INSTALLING THE BACK BOX (IN-CEILING)

1. Locate the center point of the mounting location.
2. Use the supplied mounting template to attach to the ceiling.
3. Cut out around the mounting template.
4. Attach a conduit fitting (not supplied) and lock nut (not supplied).
5. Install a safety chain/cable (not supplied) to the safety chain bracket. The safety chain/cable should be capable of supporting up to 7.3 kg (16 lb).



**Figure 2. Safety Chain**

6. Pull the wiring into the back box through the conduit fitting. **NOTE:** For environmental in-ceiling models installed in air handling spaces, use the supplied metal plug and nut. All other installation environments may use either the supplied rubber grommet plug or metal plug with nut.
7. Install the back box:
  - a. Compress the spring clips and push the back box through the hole.
  - b. Tighten the screws until you hear a clicking noise.



**Figure 3. Installing the Back Box: In-Ceiling Models**

8. Connect the power wiring. Refer to the figure below and the Wiring topic for more information.

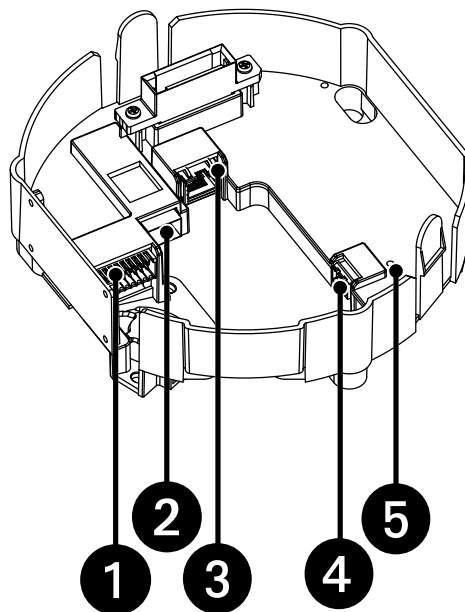


Figure 4. Wiring Connections

#	Connection/Feature	Description
1	Alarm, Relay, and Audio In/Out	An 18-pin connector with one alarm, one relay, and audio in and out.
2	SFP Port	Connects the SFP module. The port will auto-detect either 100 Mbps or 1 Gbps speeds. Ensure the same speed SFP is being used on the other side of the link.
3	RJ-45 Network Port	Connects the camera to the IP network and supplies power to the camera through the network using Power over Ethernet (802.3bt). 802.3bt must be used to power all applications.
4	Power Terminal	The port is used to connect with either a 48 VDC or 24 VAC power supply. Use 16 to 20 AWG gage wire. <b>NOTE:</b> There is no polarity for the power connection.
5	Power LED	This LED glows solid green when the power is on. The LED is off when there is no power.

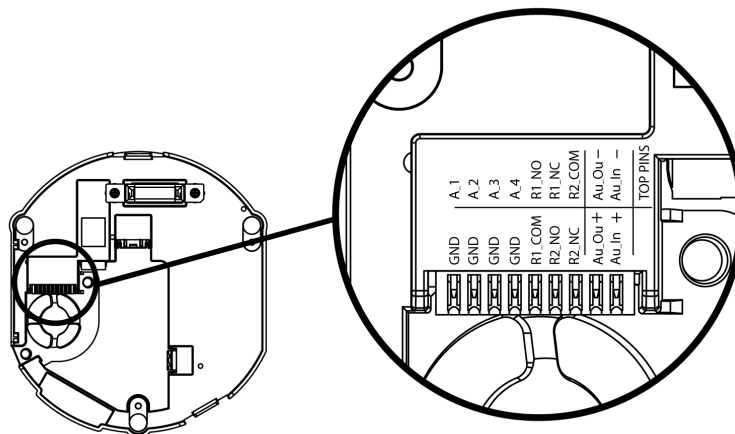
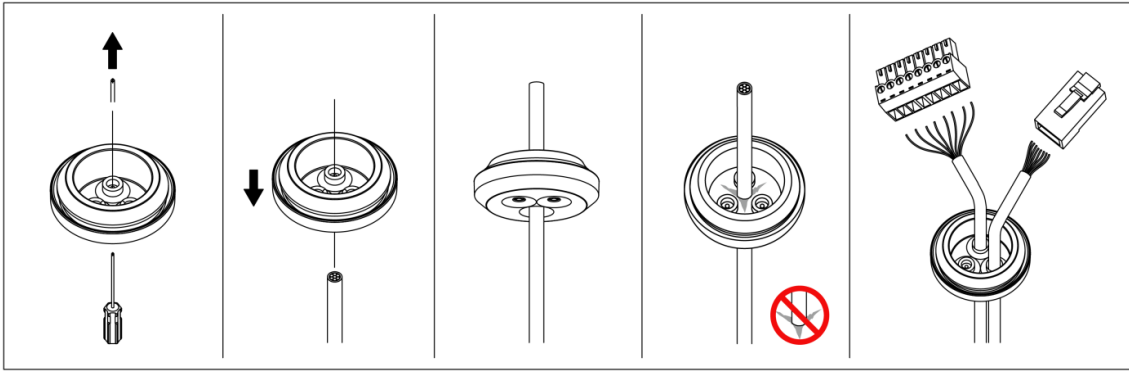


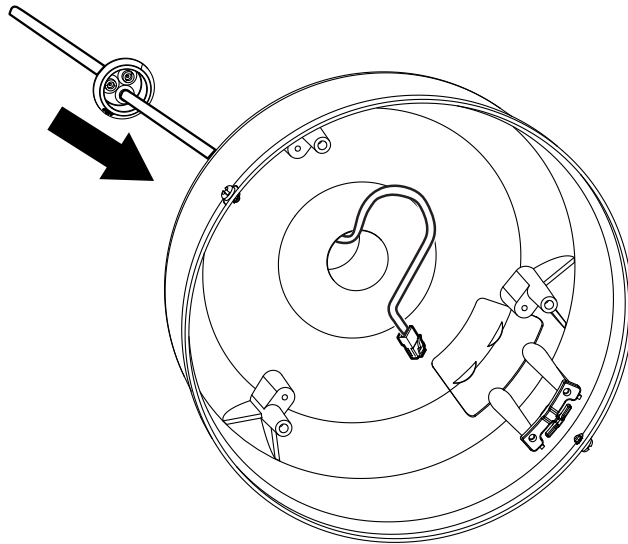
Figure 5. Alarm, Relays, and Audio Pins

## INSTALLING THE BACK BOX (PENDANT)

1. Install the pendant mount (not supplied). Refer to the instructions supplied with the mount.
2. Pull the wiring into the back box and through the supplied waterproof gland.



**Figure 6. Grommet**



**Figure 7. Pulling the Wiring into the Back Box**

3. Screw the back box onto the pendant mount and apply thread compound (supplied) to the threads on the back box.

**NOTE:** Thread compound must be applied on both standard and environmental pendants. Not doing so may prevent the units from being separated in the future.

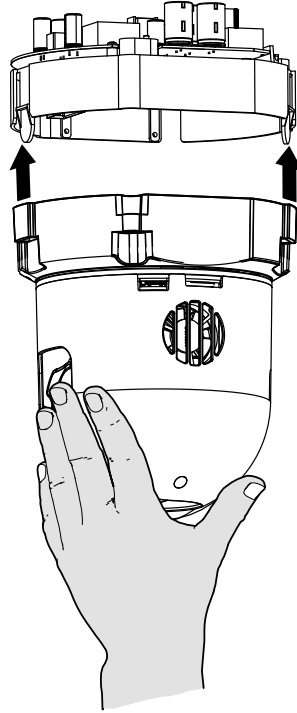
4. Connect the power wiring. Refer to Figure 4 and the Wiring section for more information.

# Installation (Dome Drive)

---

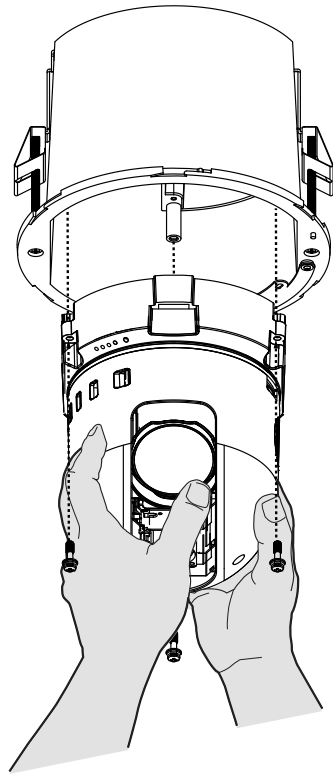
## INSTALLING THE DOME DRIVE (IN-CEILING)

1. Line up the edges of the dome drive with the inside of the back box.
2. Push the dome drive into the clips until both sides click into place. The clips temporarily hold the dome drive in place.



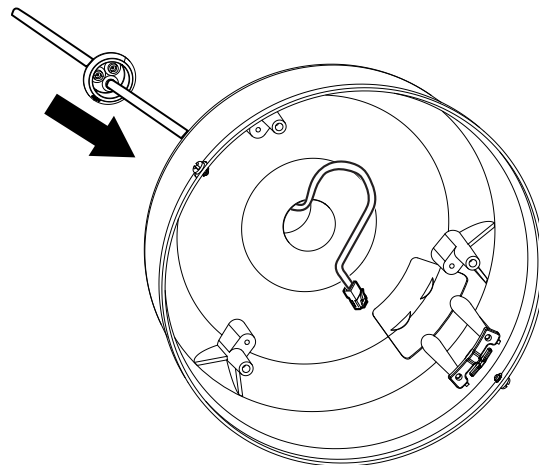
**Figure 8.** *Installing the Dome Drive*

3. Place one hand on or under the dome until the fasteners are secure.
4. Screw in the three captive fasteners until they are secure.



**Figure 9.** *Installing the Dome Drive: In-Ceiling Models*

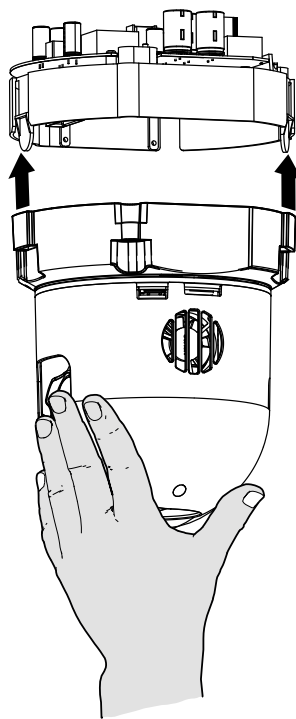
## **INSTALLING THE DOME DRIVE (PENDANT)**



**Figure 10.** *Dome Drive with Grommet Installed on Back*

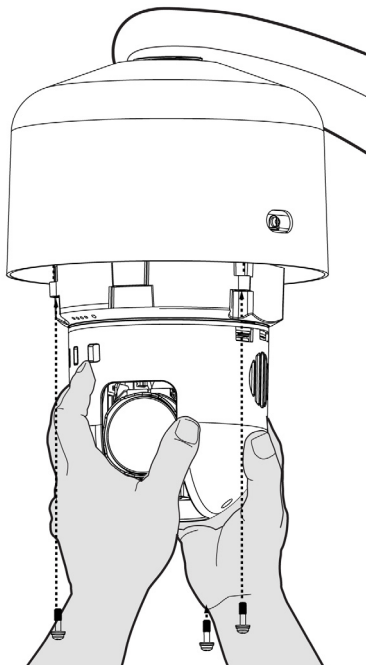
1. Line up the edges of the dome drive with the inside of the back box.
2. Push the dome drive into the clips until both sides click into place. The clips temporarily hold the dome drive in place.





**Figure 11.** *Installing the Dome Drive*

3. Place one hand on or under the dome until the fasteners are secure.
4. Screw in the three captive fasteners until they are secure.



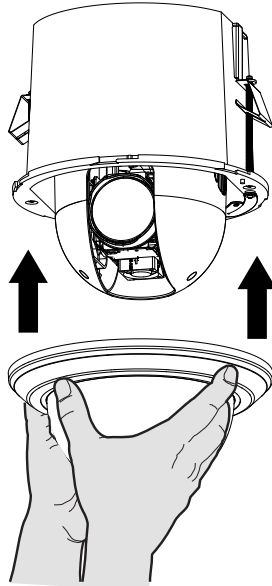
**Figure 12.** *Installing the Dome Drive: Pendant Models*

# Installation (Lower Dome)

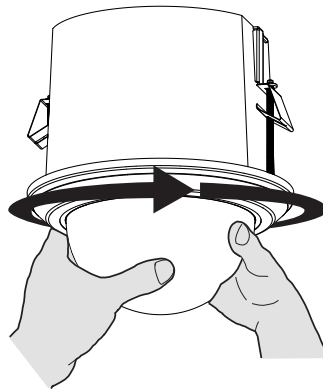
---

## INSTALLING THE LOWER DOME (IN-CEILING/INDOOR)

1. Attach the back box leash to the lower dome.
2. Turn counter clockwise until the dome is nestled into the gaps in the back box. Then turn a little clockwise to secure.
3. Align the dome arrows with the arrows on the base and then use a 15 to 20 degree clockwise turn to secure.



**Figure 13.** *Placing the Lower Dome: In-Ceiling Indoor Models*

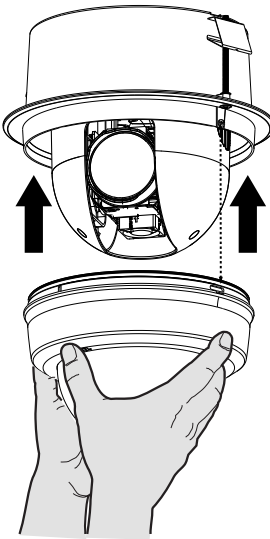


**Figure 14.** *Tightening the Lower Dome: In-Ceiling Indoor Models*

4. Apply power to the dome. The dome system will complete a configuration sequence.

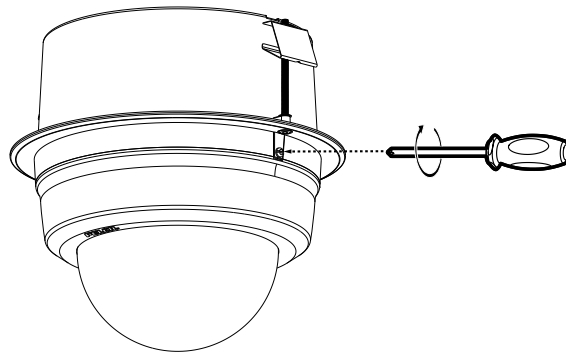
## INSTALLING THE LOWER DOME (IN-CEILING/ENVIRONMENTAL)

1. Attach the back box leash to the lower dome.
2. Align the back box screws with the slots on the lower dome.



**Figure 15.** *Placing the Lower Dome: In-Ceiling Environmental Models*

3. Push the lower dome onto the back box.
4. Tighten the screws to secure the lower dome to the back box.

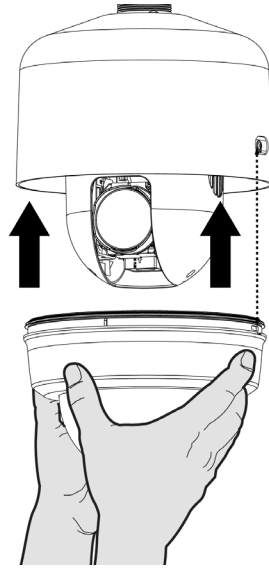


**Figure 16.** *Tightening the Lower Dome: In-Ceiling Environmental Models*

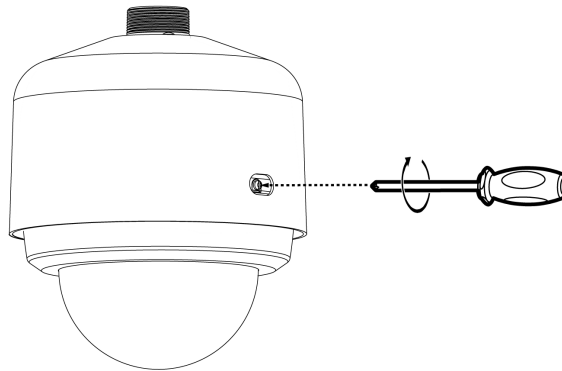
5. Apply power to the dome. The dome system will complete a configuration sequence.

## **INSTALLING THE LOWER DOME (ENVIRONMENTAL PENDANT)**

1. Attach the back box leash to the lower dome.
2. Align the back box screws with the slots on the lower dome.



**Figure 17.** *Placing the Lower Dome: Pendant Models*



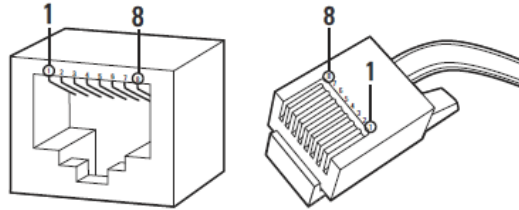
**Figure 18.** *Tightening the Lower Dome: Pendant Models*

3. Apply power to the dome. The dome system will complete a configuration sequence.

# Ethernet Wiring Requirement for POE 802.3bt

Connect a Cat5e cable or higher cable (not supplied) to the RJ-45 network connector. The 8-pin port includes video over Ethernet, and PoE 802.3bt for the camera. PoE 802.3bt 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.

**Figure 19. Pin Numbering**



**Figure 20. Pin Functions**

<b>Pairs</b>	<b>Pair 1</b>	<b>Pair 2</b>	<b>Pair 3</b>	<b>Pair 4</b>
<b>Pins</b>	1 and 2	3 and 6	4 and 5	7 and 6
<b>Signal Assignment</b>	BI_DA+/BI_DA-	BI_DB+/BI_DB-	BI_DC+/BI_DC-	BI_DD+/BI_DD-
<b>Valid 4-pair Power Configurations</b>	N	P	N	P
	N	P	P	N
	P	N	N	P
	P	N	P	N
N denotes a pair connected to negative potential. P denotes a pair connected to positive potential.				

# Accessing the Camera

---

Anyone who access the camera can view live video. If you want to prevent users from viewing video without logging in, you must change the permissions for public users.

The recommended browsers for your camera are the latest version of Internet Explorer®, Microsoft™ Edge™, Google Chrome™ browser, or Mozilla® Firefox®. for supported browser versions, refer to the specification sheet.

1. Open a web browser.
2. Type the camera's IP address (192.168.0.20) or host name in your browser's address bar, and the press Enter.

**NOTE:** You can obtain your camera's IP address or access the camera using the Pelco Device Utility or VxToolbox software. If DHCP is enabled but a DHCP server is not on the network, the camera automatically assigns itself both an IPv4 link local address (169.254.x.x, where the lower two octets are random) and a 192.168.0.20 address. Additional cameras will assign themselves different IPv4 link local addresses and the next available 192.168.0.x IP addresses in sequential order. For example, if three cameras are connected to a network without a DHCP server, the first camera to connect assigns itself the IP address 192.168.0.20, the second camera assigns itself 192.168.0.21, and the third camera assigns itself 192.168.0.22.

3. Click Login.
4. If needed, type your user name and password.

**NOTE:** For security purposes, it is recommended that you create a user account when you login to the camera for the first time.

- In its out-of-the-box configuration, the camera has no user name and password assigned. For security purposes, it is recommended that you set an administrative user name and password after initial configuration of the camera. Creation of an administrative user name changes the state of the camera to its "operational mode," where credentials must be provided in order to change its configuration.
- There is no provision for recovering a forgotten administrator user name or password. The camera can be restored to its out-of-the-box, no-password configuration by powering down, depressing the Factory Defaults button, and holding the button down for at least four seconds while power the camera back up.
- If a user name and password exist, a Login link appears in the upper right area of your web browser.

5. Click Log In.

## SUPPLEMENTAL RESOURCES

All Spectra Enhanced Series 7 supplemental resources (e.g. firmware, documentation, VxToolbox, and Device Utility) are available in one location: [www.pelco.com/spectra-enhanced-7](http://www.pelco.com/spectra-enhanced-7)

## PELCO TROUBLESHOOTING CONTACT INFORMATION

If the instructions provided fail to solve your problem, contact Pelco Product Support at 1-800-289-9100 (USA and Canada) or +1-559-292-1981 (international) for assistance. Be sure to have the serial number available when calling.

Do not try to repair the unit yourself. Leave maintenance and repairs to qualified technical personnel only.

### REVISION HISTORY

Manual #	Date	Comments
C6648M	12/19	Original version.

Pelco, the Pelco logo, and other trademarks associated with Pelco products referred to in this publication are trademarks of Pelco, Inc. or its affiliates. ONVIF and the ONVIF logo are trademarks of ONVIF Inc. All other product names and services are the property of their respective companies. Product specifications and availability are subject to change without notice.

© Copyright 2019, Pelco, Inc.  
All rights reserved.



***PELCO***™

*Pelco, Inc. 625 W. Alluvial Fresno, California 93711 United States*  
*USA & Canada Tel (800) 289-9100 Fax (800) 289-9150*  
*International Tel +1 (559) 292-1981 Fax +1 (559) 348-1120*  
**[www.pelco.com](http://www.pelco.com)**