



by **Schneider** Electric

# INSTALLATION

## 090 Series Camclosure® Indoor Integrated Camera System



**Surface Mount/In-Ceiling**

**C2462M-E (3/09)**

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# Important Safety Instructions

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1. Installation and servicing should be done only by qualified service personnel and conform to all local codes.
2. Unless the unit is specifically marked as a NEMA Type 3, 3R, 3S, 4, 4X, 6, or 6P enclosure, it is designed for indoor use only and must not be installed where exposed to rain and moisture.
3. Use only installation methods and materials capable of supporting four times the maximum specified load.

## 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 B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You may also find helpful the following booklet, prepared by the FCC: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402.

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 B digital apparatus complies with Canadian ICES-003.

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

# Description

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The ICS090 Series Camclosure® integrated camera system integrates a camera and lens package in a small, discreet dome. The system is easy to install and can be mounted or recessed to the surface of a ceiling or wall.

Prior to the installation of your new system, thoroughly familiarize yourself with the information in this manual.

## PARTS LIST

The following materials are supplied with the 090 Series Camclosure integrated camera system:

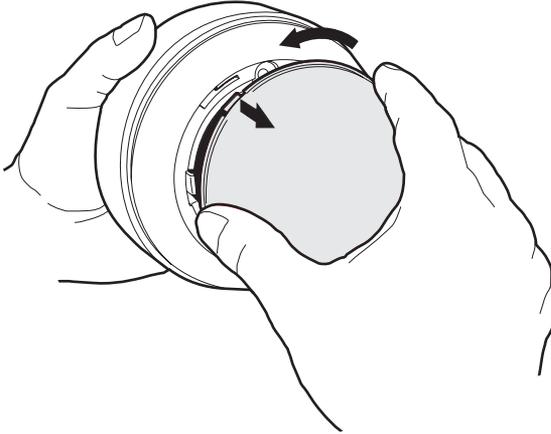
<b>Qty</b>	<b>Description</b>
1	Assembled ICS090 Series Camclosure (back box, smoked dome bubble, and camera module)
1	Clear dome bubble
1	Plastic liner
1	Adapter plate
2	Screws, 8-32 x 1.00-inch Phillips pan head
2	Screws, 8-32 x 0.750-inch, self-tapping
2	Screws, 8-32 x 2.50-inch, self-tapping
2	Screws, 10-32 x 1.50-inch, self-tapping

# Remove the Dome Bubble

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Turn the dome bubble counterclockwise and lift (refer to Figure 1). Place the bubble on a nonabrasive surface.

If the unit is supplied with a dome liner, remove the liner before installing the unit. To remove the liner, gently lift it from the unit. Place the liner to the side; it will be reinstalled along with the bubble after the installation has been completed following installation.



**Figure 1.** Removing the Dome Bubble

# Installation

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The installation methods for the ICS090 Series include the following options:

- Mount to the surface of a ceiling or wall
- Install in a suspended ceiling
- Install in a fixed ceiling or wall
- Mount to the surface of a 4S standard electrical box
- Install in a 4S deep electrical box

## SURFACE INSTALLATION: CEILING/WALL

Refer to Figure 2 on page 8 for the following steps. Refer to Figure 3 on page 8 if you are installing the unit to the surface of a concrete ceiling or wall.

1. Pull the video and power wires through the ceiling/wall.
2. Connect the video cable and wires.

**BNC:** Connect the BNC connector from the Camclosure to a mating BNC connector.

**Twisted pair:** Connect the blue wire to Video +; connect the gray wire to Video -.

3. Connect the power wires (refer to Table A).

**Table A.** Power Input: Surface, Ceiling/Wall Installation

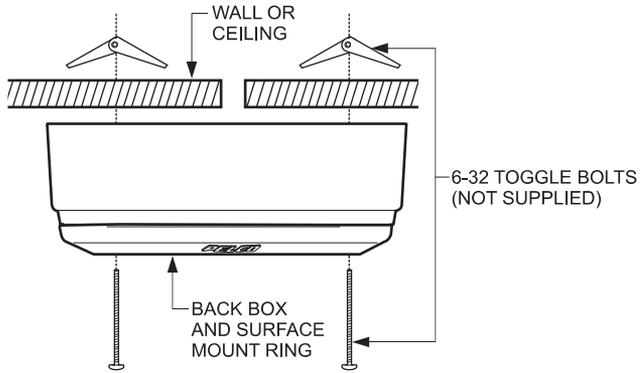
Voltage	Red Wire	Black Wire
12 VDC	+	Ground
24 VAC	-	-

*AC operation only:* If you are wiring more than one Camclosure to the same transformer, connect one side of the transformer to the red wire on all units; connect the other side of the transformer to the black wire on all units.

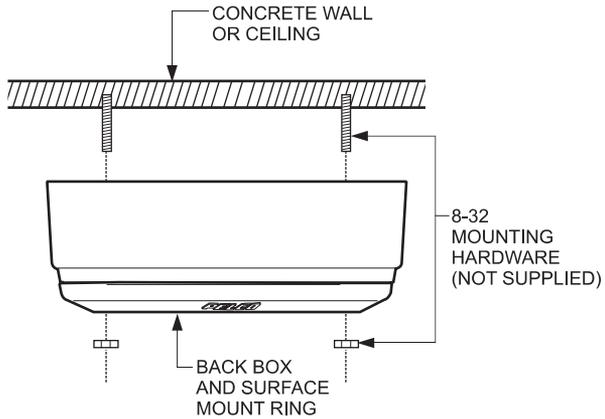
**NOTE:** Failure to connect all of the units in the same way will cause the cameras to be out of phase with each other, which might produce a vertical roll when switching between cameras.

- Use 6-32 toggle bolts (not supplied) to attach the surface mount ring and back box to the mounting surface (refer to Figure 2).

**NOTE:** For a concrete ceiling or wall installation, use 8-32 mounting hardware (not supplied), refer to Figure 3.



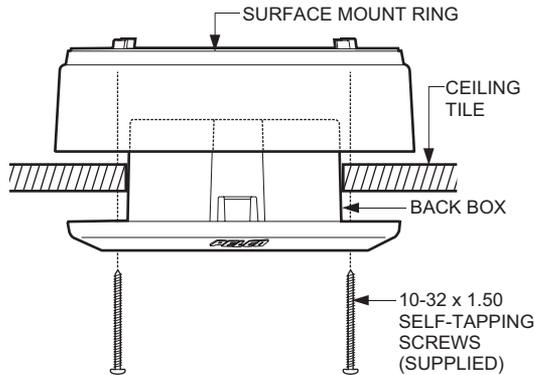
**Figure 2.** Ceiling/Wall Installation



**Figure 3.** Concrete Ceiling/Wall Installation

## IN-CEILING INSTALLATION: SUSPENDED CEILING

1. Remove the ceiling tile from the ceiling (refer to Figure 4).
2. Cut a 4-inch diameter hole in the ceiling tile.
3. Remove the surface mount ring from the back box (refer to Figure 5 on page 10):
  - a. Place your fingers on the circular marks located on the sides of the surface mount ring.
  - b. Pinch the sides.
  - c. Lift and remove the surface mount ring from the back box. Do not discard the surface mount ring because it is required to complete the installation.
4. Turn the surface mount ring upside down and place it on the inside of the ceiling tile.
5. Attach the back box to the ceiling tile and surface mount ring with two 10-32 x 1.50-inch self-tapping screws (supplied).



**Figure 4.** Ceiling Tile Installation

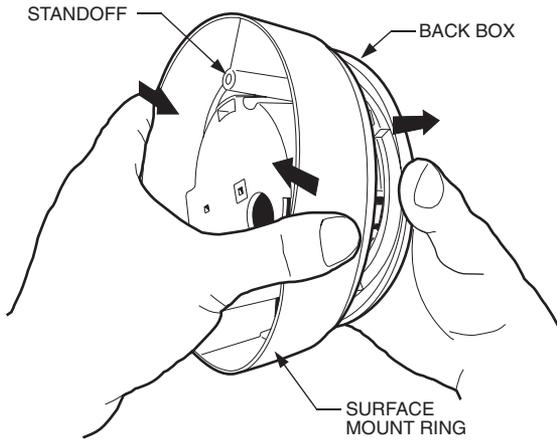
6. Replace the ceiling tile.
7. Remove an adjacent ceiling tile and connect the video cable/wires.
 

**BNC:** Connect the BNC connector from the Camclosure to a mating BNC connector.

**Twisted pair:** Connect the blue wire to Video +; connect the gray wire to Video -.
8. Connect the power wires (refer to Table B).

**Table B.** Power Input: In-Ceiling, Suspended Ceiling Installation

Voltage	Red Wire	Black Wire
12 VDC	+	Ground
24 VAC	-	-



**Figure 5.** How to Remove Surface Mount Ring from Back Box

*AC operation only:* If you are wiring more than one Camclosure to the same transformer, connect one side of the transformer to the red wire on all units; connect the other side of the transformer to the black wire on all units.

**NOTE:** Failure to connect all of the units in the same way will cause the cameras to be out of phase with each other, which might produce a vertical roll when switching between cameras.

## IN-CEILING INSTALLATION: FIXED CEILING OR WALL

1. Cut a 4-inch diameter hole in the ceiling/wall (refer to Figure 6 on page 11).
2. Remove the surface mount ring from the back box (refer to Figure 5 on page 10).
  - a. Place your fingers on the circular marks located on the sides of the surface mount ring.
  - b. Pinch the sides.
  - c. Lift and remove the surface mount ring from the back box. Do not discard the surface mountring, it is required to complete the installation.
3. Connect the video cable and wires.

**BNC:** Connect the BNC connector from the Camclosure to a mating BNC connector.

**Twisted pair:** Connect the blue wire to Video +; connect the gray wire to Video -.
4. Connect the power wires (refer to Table C).

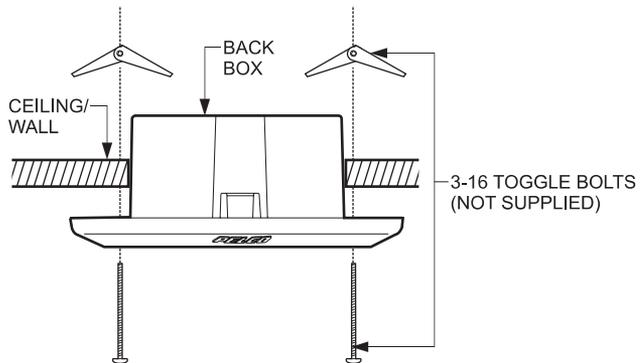
**Table C.** Power Input: In-Ceiling, Fixed Ceiling/Wall Installation

Voltage	Red Wire	Black Wire
12 VDC	+	Ground
24 VAC	-	-

*AC Operation Only:* If you are wiring more than one Camclosure to the same transformer, connect one side of the transformer to the red wire on all units; connect the other side of the transformer to the black wire on all units.

**NOTE:** Failure to connect all of the units in the same way will cause the cameras to be out of phase with each other, which might produce a vertical roll when switching between cameras.

5. Use 3-16 toggle bolts (not supplied) to attach the back box to the mounting surface.



**Figure 6.** In-Ceiling Installation to a Fixed Ceiling or Wall

## SURFACE INSTALLATION: 4S STANDARD ELECTRICAL BOX

1. Attach the adapter ring to the 4S box with two 8-32 x 1.00-inch screws (supplied; refer to Figure 7).
2. Connect the video cable and wires.

**BNC:** Connect the BNC connector from the Camclosure to a mating BNC connector.

**Twisted pair:** Connect the blue wire to Video +; connect the gray wire to Video -.

3. Connect the power wires (refer to Table D).

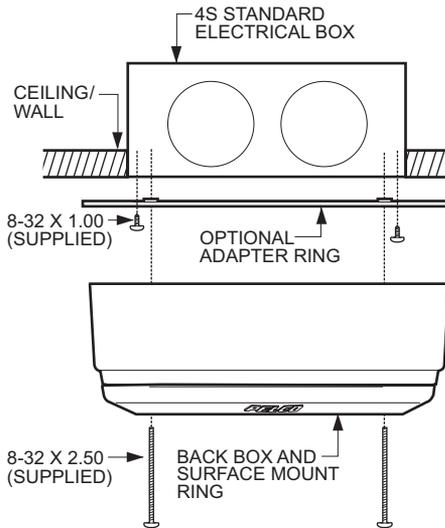
**Table D.** Power Input: Surface, 4S Standard Electrical Box Installation

Voltage	Red Wire	Black Wire
12 VDC	+	Ground
24 VAC	-	-

*AC Operation Only:* If you are wiring more than one Camclosure to the same transformer, connect one side of the transformer to the red wire on all units; connect the other side of the transformer to the black wire on all units.

**NOTE:** Failure to connect all of the units in the same way will cause the cameras to be out of phase with each other, which might produce a vertical roll when switching between cameras.

4. Attach the surface trim ring and back box to the adapter plate with two 8-32 x 2.50-inch screws (supplied).



**Figure 7.** 4S Standard Electrical Box Installation

## IN-CEILING INSTALLATION: 4S DEEP ELECTRICAL BOX

1. Remove the surface mount ring from the back box (refer to Figure 8):
  - a. Place your fingers on the circular marks located on the sides of the surface mount ring.
  - b. Pinch the sides.
  - c. Lift and remove the surface mount ring from the back box.
2. Attach the adapter ring to the 4S box with two 8-32 x 1.00-inch screws (supplied).
3. Connect the video cable/wires.

**BNC:** Connect the BNC connector from the Camclosure to a mating BNC connector.

**Twisted pair:** Connect the blue wire to Video +; connect the gray wire to Video -.

4. Connect the power wires (refer to Table E).

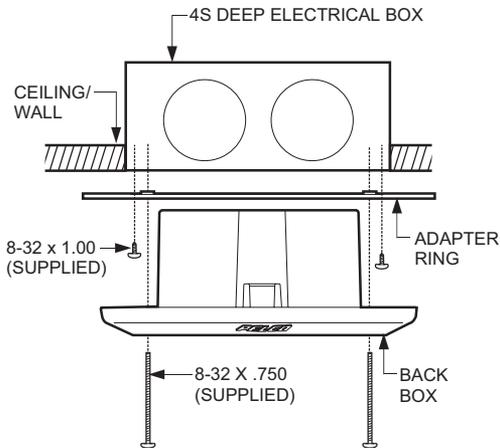
**Table E.** Power Input: In-Ceiling, 4S Deep Electrical Box Installation

Voltage	Red Wire	Black Wire
12 VDC	+	Ground
24 VAC	-	-

*AC operation only:* If you are wiring more than one Camclosure to the same transformer, connect one side of the transformer to the red wire on all units; connect the other side of the transformer to the black wire on all units.

**NOTE:** Failure to connect all of the units in the same way will cause the cameras to be out of phase with each other, which might produce a vertical roll when switching between cameras.

5. Attach the back box to the adapter plate with two 8-32 x 0.750-inch screws (supplied).



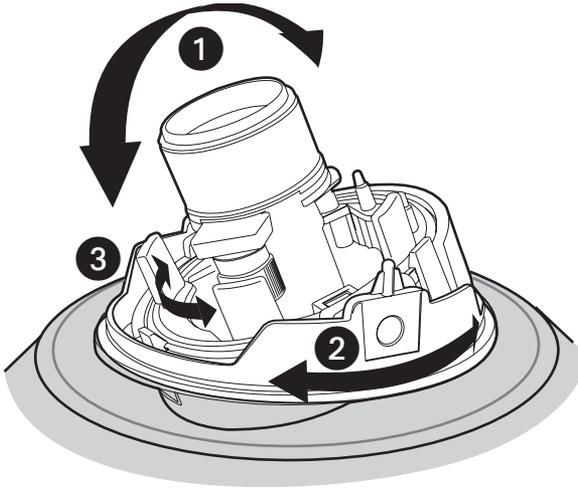
**Figure 8.** 4S Deep Electrical Box Installation

# Camera Positioning

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Manually rotate and tilt the camera module to position the camera. Do not over-rotate the module.

 **WARNING:** Excessively turning the module in one direction could result in damage to the wiring.



- ❶ Tilt 140° (20° to 160°)    ❷ Pan 360°    ❸ Rotation 360°

**Figure 9.** Positioning the Camera

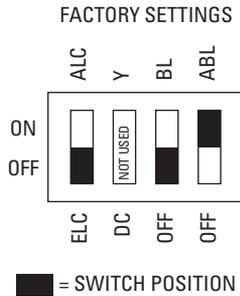
# Camera Adjustments

## SWITCH SETTINGS

### FIXED FOCAL LENGTH LENS WITHOUT AUTO IRIS

Refer to the switch drawing. The switch is located next to the lens. Automatic backlight compensation (factory setting) is used under varying lighting conditions (such as outdoors) or fixed lighting conditions where there are no bright spots that darken other picture details. Manual backlight compensation is used in fixed lighting conditions, to optimize the picture detail when there are bright spots.

- **ALC/ELC switch:** Always ELC
- **Y/DC switch:** Not used
- **Auto backlight compensation:** BLC switch OFF; ABL switch ON
- **Manual backlight compensation:** BLC switch ON; ABL switch OFF



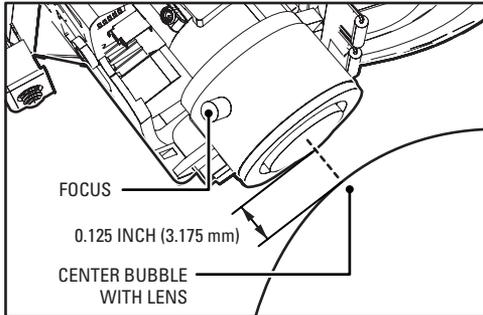
**Figure 10.** ICS090 Series Switch Settings

## FOCUS ADJUSTMENT

**NOTE:** You will need a miniature Phillips or flat-tip screwdriver to loosen and tighten the locking screw.

To adjust the focus:

1. Loosen the focus locking screw.
2. Position the inverted dome approximately 0.125 inch (3.175 mm) from the front of the lens. Make sure that the lens and the dome are centered (refer to Figure 11).
3. Turn the focus locking screw clockwise or counterclockwise to adjust the focus.
4. When the optimal focus is reached, tighten the focus locking screw.



**Figure 11.** Adjusting the Focus

## VERTICAL PHASE ADJUSTMENT

### *(24 Vac Operation Only)*

When using more than one camera power supply, a brief vertical roll may occur on the monitor when a camera view is switched. To eliminate vertical roll, reverse the 24 VAC connections on one camera. If both cameras are connected to the same transformer, this should solve the problem. If reversing the connections does not solve the problem, adjust the phase control by synchronizing, or line-locking, the cameras to one another.

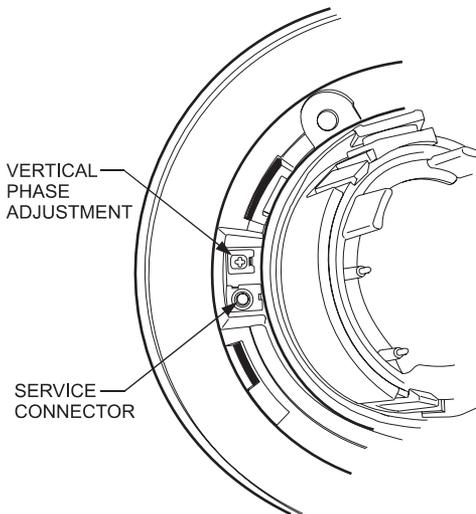
## ADJUSTING THE PHASE CONTROL

It may be necessary to have two people in communication when synchronizing the cameras: one person at the camera and another person at the monitor to observe the vertical roll and the effect of any adjustments made at the camera.

To synchronize the cameras:

1. Choose a reference camera to which all other cameras will be phased.
2. Select a camera and synchronize it to the reference camera by turning the phase adjustment control (refer to Figure 12) clockwise or counterclockwise.
3. Each time an adjustment is made, switch back and forth between the camera you are adjusting and the reference camera. Repeat this process as many times as necessary until the roll between the cameras is no longer noticeable.
4. Adjust the phase of all other cameras by repeating steps 2 and 3. Always adjust to the reference camera selected in step 1.

**NOTE:** The preferred method for camera phase adjustment is to use a dual trace oscilloscope to align the vertical sync pulses of the reference camera to the selected camera(s).



**Figure 12.** Vertical Phase Adjustment

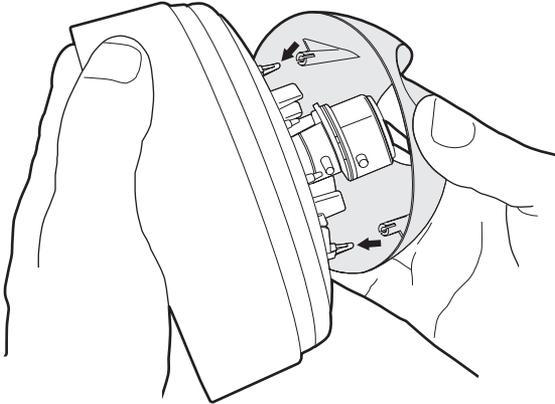
# Install Liner and Bubble

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## DOMELINER INSTALLATION

If the unit is supplied with a dome liner, reinstall the liner before installing the dome bubble (refer to Figure 13):

1. Align the studs located on the camera module with the clips on the liner.
2. Lightly pinch the sides of the liner, opposite from the clips, and place the clips over the studs.
3. When the liner is secure, position the viewing window of the liner over the lens of the camera.
4. Install the bubble (refer to *Dome Bubble Installation* on page 19).

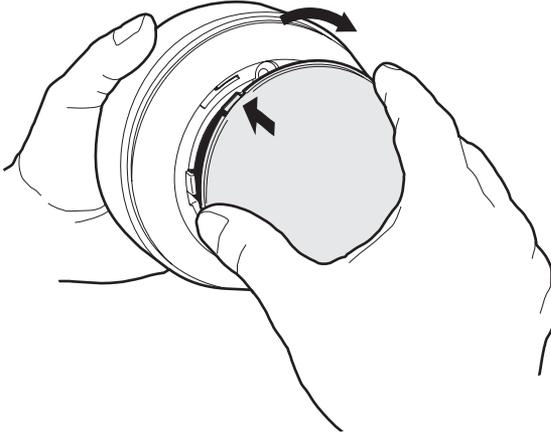


**Figure 13.** Installing the Dome Liner

## DOMED BUBBLE INSTALLATION

To install the dome bubble (refer to Figure 14):

1. Select the bubble (clear or smoked).
2. Align the standoffs of the bubble with the slots of the back box.
3. Turn the bubble clockwise until it locks in place.



**Figure 14.** Installing the Dome Bubble

# Service Connector

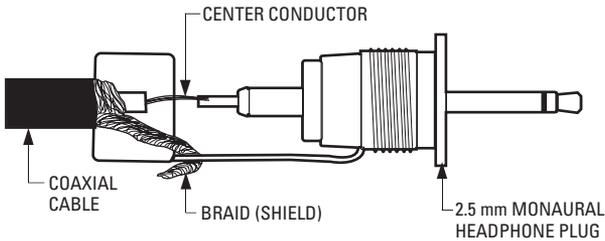
An optional 4-foot service/monitor cable, part number ICS090-SC, is available for on-site setup and adjustments. To use the cable, simply plug one end of the cable directly into the service connector of the ICS090, and then connect the other end to any standard BNC (VIDEO IN) connector on a monitor.

To assemble a longer service cable for the ICS090 Series Camclosure, purchase the following parts at a local electronics supply store:

Qty	Description
1	2.5 mm monaural headphone plug
1	CPM 88 miniature coaxial connector
1	RG174/U coaxial cable

To assemble the cable:

1. Attach the CPM 88 miniature coaxial connector to one end of the cable. Follow the directions supplied with the miniature coaxial connector.
2. Attach the 2.5 mm monaural plug to the other end of the coaxial cable (refer to Figure 15):
  - a. Remove the support sleeve from the plug, and then slip the support sleeve over the end of the cable.
  - b. Prepare the cable.
  - c. Solder the center conductor of the cable to the center pin of the plug.
  - d. Thread the braid of the cable through the hole in the crimp pin, and then solder the braid to the top of the crimp pin.
  - e. Crimp the end of the crimp pin around the cable.
  - f. Reassemble the support sleeve and the plug.



**Figure 15.** Attaching the 2.5 mm Monaural Headphone Plug

# Specifications

## ELECTRICAL

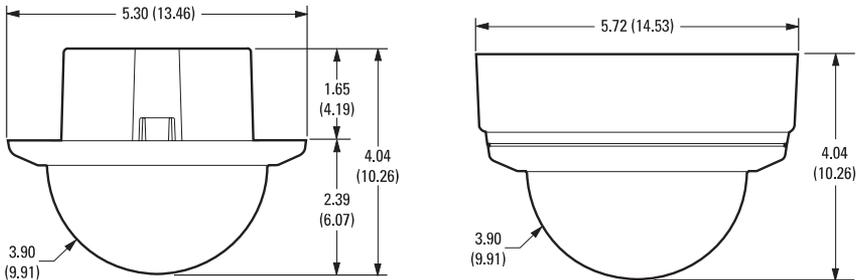
Input Voltage*	12 VDC or 24 VAC ( $\pm 10\%$ ), autosensing
Power Consumption	3 W or less
Video Connector	BNC

\*24 VAC power is recommended when installing any Camclosure integrated camera system under fluorescent lighting conditions.

## GENERAL

Pan/Tilt Adjustment	
Pan	360°
Tilt	140° (20° to 160° range)
Rotation	360°
Construction	
Back Box and Surface Mount Ring	ABS plastic
Bubble	Polycarbonate
Finish	White or Black
Light Attenuation	
Smoked	f/1.5 light loss
Clear	Zero light loss
Environment	Indoor
Operating Temperature	32° to 120°F (0° to 49°C)
Unit Weight	0.52 lb (0.24 kg)

*(Design and product specifications subject to change without notice.)*



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

## REVISION HISTORY

Manual #	Date	Comments
C2462M	11/02	Original version.
C2462M-A	1/03	Added Regulatory Notices for FCC Class B.
C2462M-B	10/05	Revised switch-setting descriptions for varifocal lens. Added WEEE statement.
C2462M-C	1/06	Updated factory switch settings for varifocal lens per ECO 13164. Updated wiring information. Added information about dome bubble.
C2462M-D	3/08	Revised for standard resolution color cameras with fixed focal lenses.
C2462M-E	3/09	Added lens focus procedure in <i>Camera Adjustments</i> . In <i>Specifications</i> , added a note for Input Voltage, added light attenuation, and removed the shipping weight.

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Spectra III is a trademark of Pelco, Inc.

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The absence of a trademark or registered trademark from this document does not constitute a waiver of intellectual property rights.

# PRODUCT WARRANTY AND RETURN INFORMATION

## WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years:
  - Fiber optic products
  - TW3000 Series unshielded twisted pair (UTP) transmission products
  - CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models
- Three years:
  - Pelco-branded fixed camera models (CCC1390H Series, C10DN Series, C10CH Series, IP3701H Series, and IX Series)
  - EH1500 Series enclosures
  - Spectra<sup>®</sup> IV products (including Spectra IV IP)
  - Camclosure<sup>®</sup> Series (IS, ICS, IP) integrated camera systems
  - DX Series digital video recorders, DVR5100 Series digital video recorders, Digital Sentry<sup>®</sup> Series hardware products, DVX Series digital video recorders, and NVR3000 Series network video recorders
  - Endura<sup>®</sup> Series distributed network-based video products
  - Genex<sup>®</sup> Series products (multiplexers, server, and keyboard)
  - PMCL200/300/400 Series LCD monitors
- Two years:
  - Standard varifocal, fixed focal, and motorized zoom lenses.
  - DF5/DF8 Series fixed dome products
  - Legacy<sup>®</sup> Series integrated positioning systems
  - Spectra III<sup>™</sup>, Spectra Mini, Spectra Mini IP, Esprit<sup>®</sup>, ExSite<sup>®</sup>, and PS20 scanners, including when used in continuous motion applications.
  - Esprit Ti and TI2500 Series thermal imaging products
  - Esprit and VVV5700 Series window wiper (excluding wiper blades).
  - CM6700/CM6800/CM9700 Series matrix
  - Digital Light Processing (DLP<sup>®</sup>) displays (except lamp and color wheel). The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.
  - Intelli-M<sup>®</sup> eIDC controllers
- One year:
  - Video cassette recorders (VCRs), except video heads. Video heads will be covered for a period of six months.
- Six months:
  - All pan and tilts, scanners, or preset lenses used in continuous motion applications (preset scan, tour, and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to a Pelco designated location. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental, or consequential damages (including loss of use, loss of profit, and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, sales order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product that does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

## RETURNS

To expedite parts returned for repair or credit, please call Pelco at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair) and designated return location.

All merchandise returned for credit may be subject to a 20 percent restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid

12-23-08

 The materials used in the manufacture of this document and its components are compliant to the requirements of Directive 2002/95/EC.



This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

***PELCO***

by **Schneider** Electric

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