

INSTALLATION/OPERATION



090 Series Camclosure® Indoor Integrated Camera System



C2462M-A (6/03)

CONTENTS

Section	Page
IMPORTANT SAFEGUARDS AND WARNINGS	3
WELCOME	4
REMOVE THE BUBBLE	5
INSTALL THE BACK BOX	6
INSTALLATION TO SURFACE OF A CEILING/WALL	7
IN-CEILING INSTALLATION – SUSPENDED CEILING	8
IN-CEILING INSTALLATION – FIXED CEILING/WALL	9
INSTALLATION TO SURFACE OF A 4S STANDARD ELECTRICAL BOX	10
INSTALLATION IN A 4S DEEP ELECTRICAL BOX	11
CAMERA POSITIONING	12
CAMERA ADJUSTMENTS	13
VARIFOCA LENS ZOOM AND FOCUS ADJUSTMENTS	13
VARIFOCA LENS AUTO IRIS LEVEL ADJUSTMENT	13
SWITCH SETTINGS	14
SWITCH SETTINGS FOR FIXED FOCAL LENGTH LENS WITHOUT AUTO IRIS	14
SWITCH SETTINGS FOR VARIFOCA LENS	14
VERTICAL PHASE ADJUSTMENT (24 VAC OPERATION ONLY)	15
HOW TO ADJUST THE PHASE CONTROL	15
REINSTALL THE DOME	16
DOME LINER INSTALLATION	16
BUBBLE INSTALLATION	16
SERVICE CONNECTOR	17
SPECIFICATIONS	18
WARRANTY AND RETURN INFORMATION	19

LIST OF ILLUSTRATIONS

Figure	Page
1 How to Remove the Bubble	5
2 Ceiling/Wall Installation	7
3 Concrete Ceiling/Wall Installation	7
4 Ceiling Tile Installation	8
5 How to Remove Surface Mount Ring From Back Box	8
6 In-ceiling Installation to a Fixed Ceiling/Wall	9
7 4S Standard Electrical Box Installation	10
8 4S Deep Electrical Box Installation	11
9 How to Position Camera	12
10 Location of Zoom and Focus Adjustments	13
11 Varifocal Lens Adjustments	13
12 Vertical Phase Adjustment	15
13 How to Install the Dome Liner	16
14 How to Install the Bubble	16
15 How to Connect the 2.5 mm Monaural Headphone Plug to the Coaxial Cable	17

IMPORTANT SAFEGUARDS AND WARNINGS

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 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.

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 Commissions rules.

WELCOME

Thank you for purchasing Pelco's Camclosure® Integrated Camera System for indoor applications. The ICS090 Series system integrates a camera and lens package in a small, discreet dome. The system is easy to install and can be mounted to the surface of a ceiling/wall or recessed in a ceiling/wall.

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

The following is supplied with the 090 Series Camclosure Integrated Camera System:

Qty.	Description
1	Assembled ICS090 Series Camclosure (back box, bubble, and camera module)
1	Adapter plate
2	8-32 x 1.00-inch Phillips pan head screws
2	8-32 x .750-inch self-tapping screws
2	8-32 x 2.50-inch self-tapping screws
2	10-32 x 1.50-inch self-tapping screws

REMOVE THE BUBBLE

Turn the bubble counterclockwise and lift (refer to Figure 1). Place the bubble on a non-abrasive surface.

If the unit is supplied with a 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.

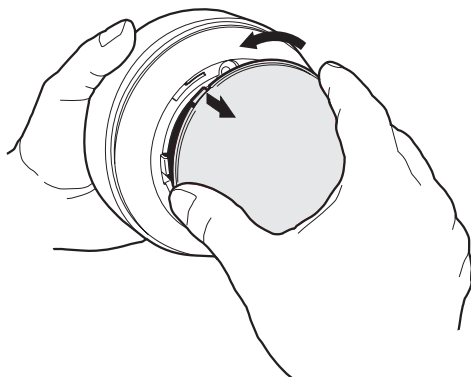


Figure 1. How to Remove the Bubble

INSTALL THE BACK BOX

The installation methods for the ICS090 Series include the following:

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

Select the best method for your installation and refer to the following pages for instructions.

Installation to Surface of a Ceiling/Wall

Refer to Figure 2 for the following steps. Refer to Figure 3 if installing the unit to a concrete ceiling/wall.

1. Pull video and power wires through the ceiling/wall.
2. Connect the video cable/wires.
BNC – Connect the BNC connector from the Camclosure to a mating BNC connector.
Twisted Pair – Blue wire = Video +
Gray wire = Video -
3. Connect the power wires.

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

AC Operation Only – If you are wiring more than one ICS090 Camclosure to the same transformer, connect one side of the transformer to the red wire on all units, and connect the other side of the transformer to the black wire on all units. Failure to connect all of the units the same way will cause the cameras to be out of phase with each other and may produce a vertical roll when switching between cameras.

4. Use 6-32 toggle bolts and attach the surface mount ring and back box to the mounting surface. For a concrete ceiling/wall installation use 8-32 mounting hardware.

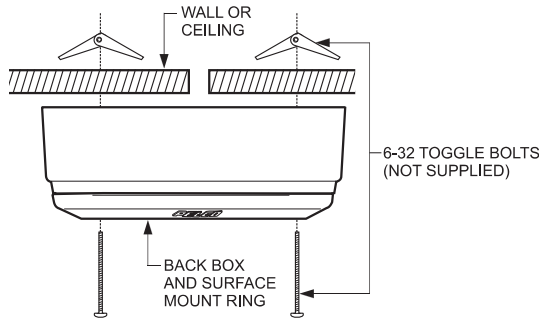


Figure 2. Ceiling/Wall Installation

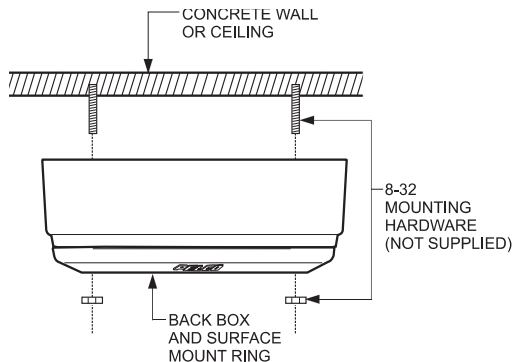


Figure 3. Concrete Ceiling/Wall Installation

In-Ceiling Installation – Suspended Ceiling

Refer to Figure 4 for the following steps.

1. Remove the ceiling tile from the ceiling.
2. Cut a four-inch diameter hole in the ceiling tile.
3. Remove the surface mount ring from the back box. Refer to Figure 5 and do the following:
 - a. Place 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 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 the two 10-32 x 1.50-inch self-tapping screws (supplied).
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 – Blue wire = Video +
Gray wire = Video -

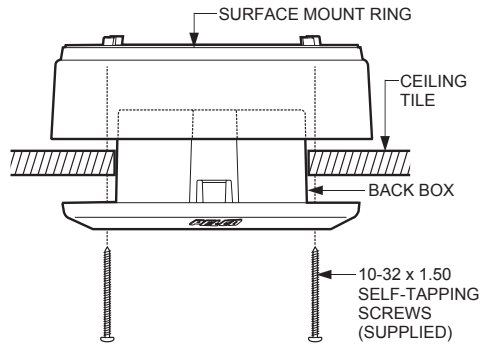


Figure 4. Ceiling Tile Installation

8. Connect the power wires.

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

AC Operation Only – If you are wiring more than one ICS090 Camclosure to the same transformer, connect one side of the transformer to the red wire on all units, and connect the other side of the transformer to the black wire on all units. Failure to connect all of the units the same way will cause the cameras to be out of phase with each other and may produce a vertical roll when switching between cameras.

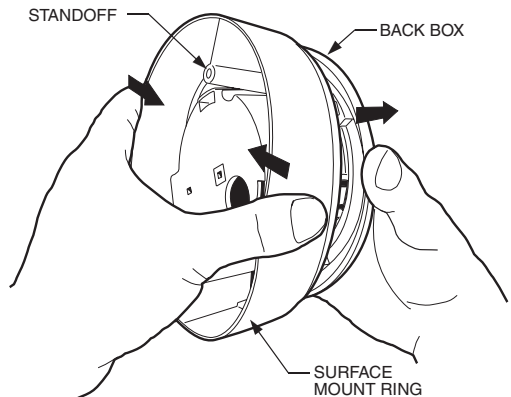


Figure 5. How to Remove Surface Mount Ring from Back Box

In-Ceiling Installation – Fixed Ceiling/Wall

Refer to Figure 6 for the following steps.

1. Cut a four-inch diameter hole in the ceiling/wall.
2. Remove the surface mount ring from the back box. Refer to Figure 5 and do the following:
 - a. Place 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.
3. Connect the video cable/wires.
BNC – Connect the BNC connector from the Camclosure to a mating BNC connector.
Twisted Pair – Blue wire = Video +
Gray wire = Video -
4. Connect the power wires.

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

AC Operation Only – If you are wiring more than one ICS090 Camclosure to the same transformer, connect one side of the transformer to the red wire on all units, and connect the other side of the transformer to the black wire on all units. Failure to connect all of the units the same way will cause the cameras to be out of phase with each other and may produce a vertical roll when switching between cameras.

5. Use 3-16 toggle bolts and attach the back box to the mounting surface.

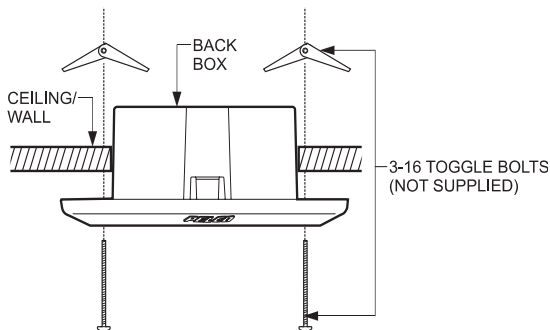


Figure 6. In-Ceiling Installation to a Fixed Ceiling/Wall

Installation to Surface of a 4S Standard Electrical Box

Refer to Figure 7 for the following steps.

1. Attach the adapter ring to the 4S box with the two 8-32 x 1.00-inch screws (supplied).
2. Connect the video cable/wires.
BNC – Connect the BNC connector from the Camclosure to a mating BNC connector.
Twisted Pair – Blue wire = Video +
Gray wire = Video -
3. Connect the power wires.

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

AC Operation Only – If you are wiring more than one ICS090 Camclosure to the same transformer, connect one side of the transformer to the red wire on all units, and connect the other side of the transformer to the black wire on all units. Failure to connect all of the units the same way will cause the cameras to be out of phase with each other and may produce a vertical roll when switching between cameras.

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

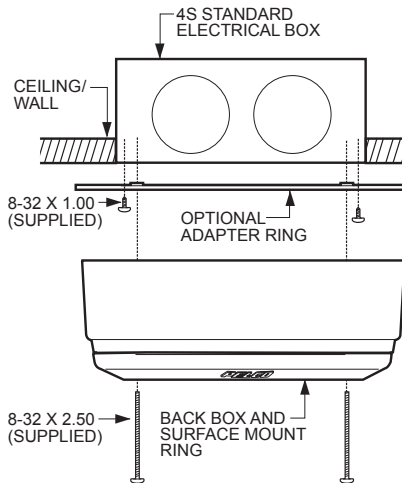


Figure 7. 4S Standard Electrical Box Installation

Installation in a 4S Deep Electrical Box

Refer to Figure 8 for the following steps.

1. Remove the surface mount ring from the back box. Refer to Figure 5 and do the following:
 - a. Place 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 the 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 – Blue wire = Video +
Gray wire = Video -

4. Connect the power wires.

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

AC Operation Only – If you are wiring more than one ICS090 Camclosure to the same transformer, connect one side of the transformer to the red wire on all units, and connect the other side of the transformer to the black wire on all units. Failure to connect all of the units the same way will cause the cameras to be out of phase with each other and may produce a vertical roll when switching between cameras.

5. Attach the back box to the adapter plate with the two 8-32 x .750-inch screws (supplied).

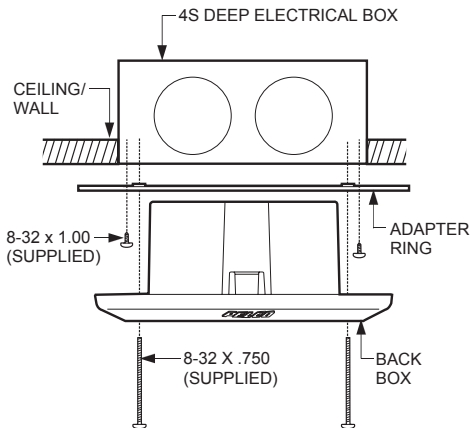
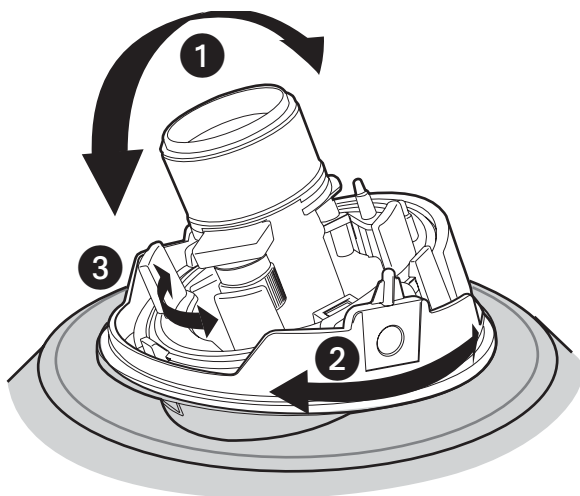


Figure 8. 4S Deep Electrical Box Installation

CAMERA POSITIONING

Manually rotate and tilt the camera module to position the camera. Do not over-rotate the module. Excessively turning the module in one direction could result in damage to the wiring.



❶ Tilt 140° ❷ Pan 360° ❸ Rotation 360°

Figure 9. How to Position Camera

CAMERA ADJUSTMENTS

VARIFOCAL LENS ZOOM AND FOCUS ADJUSTMENTS

1. Select a field of view by turning the zoom adjustment ring clockwise/counterclockwise. Refer to Figure 10.
2. Tighten the zoom locking screw.
3. Adjust the focus by moving the focus locking screw clockwise/counterclockwise.
4. Tighten the focus locking screw.

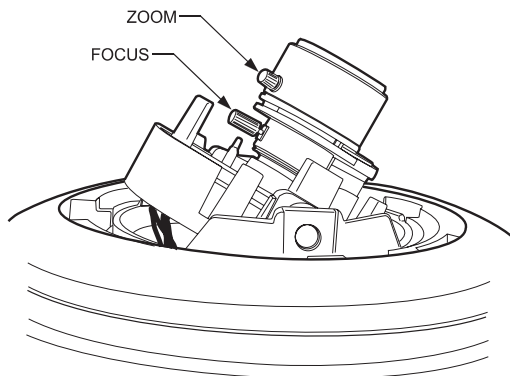


Figure 10. Location of Zoom and Focus Adjustments

VARIFOCAL LENS AUTO IRIS LEVEL ADJUSTMENT

To adjust the auto iris level do the following:

1. Manually rotate the camera module to access the auto iris level adjustment (refer to Figure 11).
2. Turn the screw clockwise to decrease the brightness level and counterclockwise to increase the brightness level.

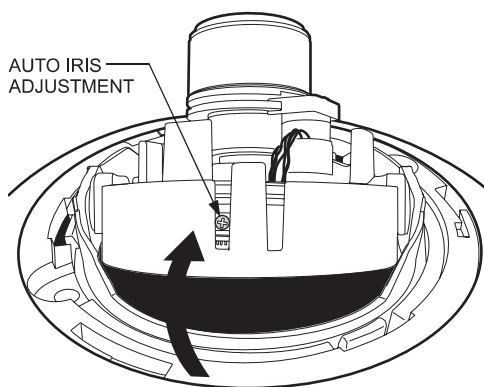


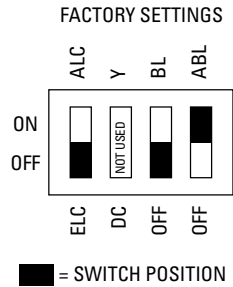
Figure 11. Varifocal Lens Adjustments

SWITCH SETTINGS

Switch Settings for 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.

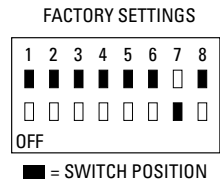
ALC/ELC switch:	Always ELC
Y/DC switch:	Not used
Auto backlight compensation:	BLC switch OFF ABL switch ON
Manual backlight compensation:	BLC switch ON ABL switch OFF



Switch Settings for Varifocal Lens

The high resolution camera with varifocal lens and auto iris is configured at the factory for optimal performance in lighting conditions where auto iris is required. It is also configured with the shutter speed set at 1/60 (NTSC) or 1/50 (PAL) and AGC set at 6 dB of gain.

AE Functions	1	AWB	Automatic white balance
	2	GAM	Gamma function
	3	AGC	Automatic gain control
	4	ESC	Electronic shutter control
	5	BLC	Backlight compensation
	6	FL	Flickerless
	7	AE	Automatic exposure
	8	Not used	



To enable automatic exposure

Turn on switch 7, and then turn on/off switch 4 for electronic shutter control, switch 5 for backlight compensation, and switch 6 for flickerless motion.

To manually set and lock AWB

Place a white background in front of camera and turn off switch 1.

For gamma correction

Set switch 2 to accurately reproduce scene brightness; when turned on, $\gamma = 0.6$, and when turned off, $\gamma = 1.0$.

For gain control

Switch 3 On increases gain by 6 dB, and switch 3 Off increases gain by 18 dB.

To enable auto iris and manually set shutter speed

Turn off switch 7; set switches 4, 5, and 6 for the desired shutter speed.

CAUTION: Do not change the shutter speed unless you understand how changing the settings will affect the scene detail.

Shutter Speed	Switch Number and Position			
	7	6	5	4
1/60 (NTSC) 1/50 (PAL)	Off	On	On	On
1/100		Off	On	On
1/250		On	Off	On
1/500		Off	Off	On
1/1000		On	On	Off
1/2000		Off	On	Off
1/4000		On	Off	Off
1/10000		Off	Off	Off

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.

How to Adjust 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 and/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 through 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).

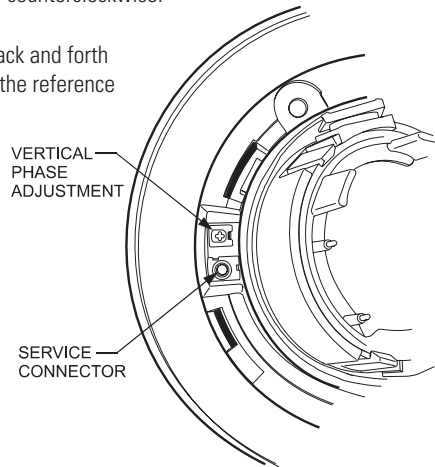


Figure 12. Vertical Phase Adjustment

REINSTALL THE DOME

DOMELINER INSTALLATION

If the unit is supplied with a dome liner, reinstall the liner before installing the bubble. To install the liner refer to Figure 13 and do the following:

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 clips over the studs.
3. Once the liner is secure, position the viewing window of the liner over the lens of the camera.
4. Install the bubble.

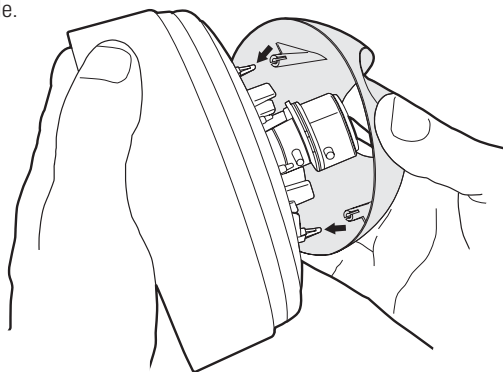


Figure 13. How to Install the Dome Liner

BUBBLE INSTALLATION

To install the bubble refer to Figure 14 and do the following:

1. Align the standoffs of the bubble with the slots of the back box.
2. Turn the bubble clockwise, until it locks in place.

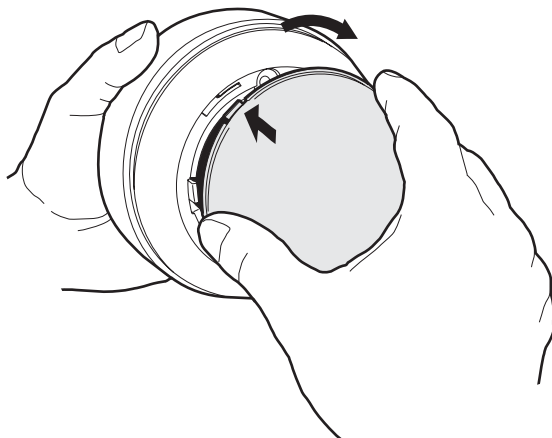


Figure 14. How to Install the Bubble

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 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:

- 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. Refer to Figure 15 and do the following to attach the 2.5 mm monaural plug to the other end of the coaxial cable:
 - 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 connector 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.

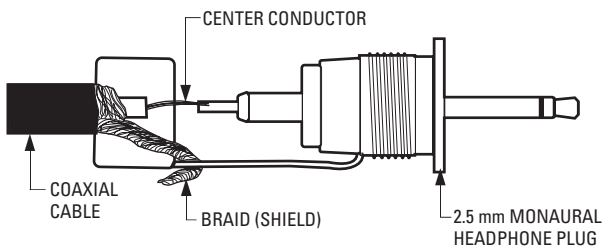


Figure 15. How to Connect the 2.5 mm Monaural Headphone Plug to the Coaxial Cable

SPECIFICATIONS

BACKBOX

Electrical

Input Voltage:	12 VDC or 24 VAC ($\pm 10\%$), auto-sensing
Power Consumption:	3 watts or less
Video Connector:	BNC

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

Environment: Indoor

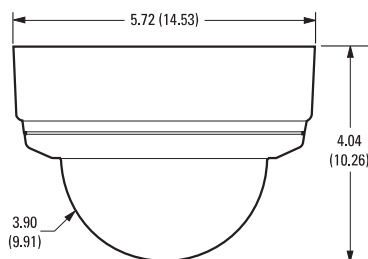
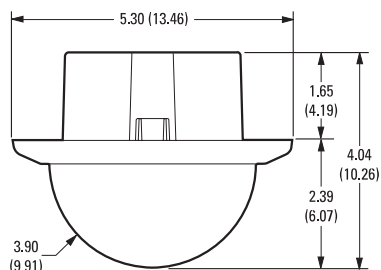
Operating Temperature: 32°F to 120°F (0° to 49°C)

Weight

Unit: .52 lb (.24 kg)

Shipping: 2 lb (.91 kg)

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



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

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 on Pelco manufactured cameras (CC3500/CC3600/CC3700 and MC3500/MC3600 Series); two years on all other cameras.
- Three years on Genex® Series (multiplexers, server, and keyboard) and 090 Series Camclosure® Camera System.
- Two years on 100/150, 200 and 300 Series Camclosure® Camera Systems.
- Two years on cameras and all standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM6800E/CM8500/CM9500/CM9740/CM9760 Matrix, DF5 and DF8 Series Fixed Dome products.
- Two years on Spectra®, Esprit®, and PS20 Scanners, including when used in continuous motion applications.
- Two years on Esprit and WW5700 series window wiper (excluding wiper blades).
- Eighteen months on DX Series digital video recorders.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, 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 Pelco, Clovis, California. 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 which 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

In order to expedite parts returned to the factory for repair or credit, please call the factory 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).

All merchandise returned for credit may be subject to a 20% 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. Ship to the appropriate address below.

If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico:

Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico:

Intermediate Consignee

American Overseas Air Freight
320 Beach Road
Burlingame, CA 94010
USA

Ultimate Consignee

Pelco
3500 Pelco Way
Clovis, CA 93612-5699
USA

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REVISION HISTORY

Manual #	Date	Comments
C2462M	11/02	Original version.
C2462M-A	1/03	Added Regulatory Notices for FCC Class B.



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