RISE™ Series

4260HD Camera Positioning System

4290HD Dual Spectrum Positioning System

Installation Manual

9995000 Rev B

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(858) 391-1800

Table of Contents

1.0 General Information

Congratulations on your purchase of a CostarHD Camera Positioning or Dual Spectrum Positioning Camera System!

Please be sure to carefully review the Installation and Operation manuals for your product before starting the installation process.

1.1 About This Document

This document contains information on how to install and maintain the 4260HD and 4290HD Series. Please read this manual carefully prior to installation to prevent any accidental damage or misuse. The manual is available from the CostarHD website at http://www.costarhd.com/Support/Product-Documentation.

The information in this manual is subject to change without notice. Please refer to the above website for the latest information

Note: All graphics contained within this document, including images and other displays, are for reference use only and are subject to change.

1.2 Additional Information and Documents Related to the Camera System

For information on the camera system operation, see Operation manual. The manual is available from the CostarHD website at http://www.costarhd.com/Support/Product-Documentation.

1.3 Copyright/Intellectual Property Rights Statement

1.4 FCC Compliance

This equipment has been tested and found to comply with the limits for 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.

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. Changes or modifications to this device void the warranty.

1.5 Support Services

Please contact CostarHD Customer Service Department for technical assistance at (858) 391-1800 option 2.

2.0 Returns

2.1 Instructions

This item was thoroughly tested and carefully packed at the factory prior to shipping. Upon acceptance by the carrier, the carrier assumes responsibility for the item's safe arrival. If you receive the item in a damaged condition, apparent or concealed, a claim for damage must be made to the carrier.

If a visual inspection shows damage upon receipt of this shipment, it must be noted on the freight bill or express receipt and the notation signed by the carrier's agent. Failure to do this can result in the carrier refusing to honor the claim.

When the damage is not apparent until the unit is unpacked, a claim for concealed damage must be made. Make a mail or phone request to the carrier for inspection immediately upon discovery of the concealed damage. Keep all cartons and packing materials.

To return the product to the factory for service, please contact the Customer Service Department for a Return Material Authorization (RMA) Number.

Prominently display the RMA number on the outside of the shipping container(s) and on paperwork contained inside. Give a brief description of why the equipment is being returned and list the symptoms of any problems being experienced with the equipment.

Note: If you have any issues, please refer to section *"Support Services" on page 5* for assistance.

2.2 Shipment

Important: If the camera needs to be shipped, please use the original packaging material which was designed to protect the product during transportation. If the original packaging is lost or damaged, please order a replacement from Customer Service.

3.0 Safety

3.1 Instructions

Warning: Do not remove the covers or housing. There are no user-serviceable parts inside.

Warning: The Schrader Valves on the camera head's back plate are for factory use only. Do not attempt to add any gas to the camera head.

Warning: PoE++ (Power over Ethernet) injectors used with this camera system may operate from 100-240 Vac. These voltages are dangerous. Use extreme care working with equipment connected to these voltages.

Note: NFPA 70 (Articles 800.30 and 830.30), National Electric Code® requires that a listed primary protector be installed on the conductors of outdoor communication circuits entering a premises, as close as possible to the point of entrance. The primary protector must be appropriate to the circuit type (PoE, PoE++, or Ethernet).

Warning: Voltages that present a shock hazard may exist on PoE circuits. Use caution to avoid direct contact with exposed, bare Ethernet circuit conductors or connector contacts.

Warning: Do not use y-cables or other non-standard wiring schemes.

Caution: In order to prevent damage or deterioration of the optical system avoid pointing the camera system directly toward the sun.

Warning: Some models of this camera system operate from 120 Vac or 24 V. Use care working with equipment connected to 120 Vac or 24 V.

- Installation must be done by qualified installers, and conform to all local codes and regulations.
- All servicing must be performed by qualified service personnel. Procedures in this manual do not require entry into the housing of the camera system. The unit contains sensitive devices that can be damaged by static discharge. To reduce the risk of electric shock and damage to the unit by static discharge do not perform any servicing other than described in these instructions. If the unit is defective, please contact the Customer Service Department for technical assistance.
- It is the user's responsibility to ensure that the mounting methods are safe and adequate for the location.
- Use only stainless steel (SS) hardware to fasten the mount to an outdoor surface.

3.2 Grounding

- To provide protection against electrical surges induced by lightning, static charges, or any other cause, the camera and cabling system must be properly grounded to earth. For installation on a building, the camera must be bonded (that is, provided with a low impedance connection) to the building's structural earth ground system. For installation on a metal pole with a proper ground system at the base, the camera must be bonded to the pole. For installation on a non-grounded or insulated support, the camera must be grounded with an adequate ground strap or wire between the camera and a nearby ground system, or to a ground system installed at the base of the support. Failure to adequately ground the camera may lead to failure of the camera. This applies to low voltage (24 V and PoE cameras) as well as to 120 Vac cameras.
- **Failures due to surges are not covered by the warranty, as they are not due to defects in material or workmanship, and it is the installer's responsibility to meet these grounding requirements.**

Note: Refer to *" Best Practices" on page 33* Surge Protection Devices for additional information on grounding and surge protection concepts.

4.0 Package Contents

Upon opening of the products shipping package, please verify you have received the following items:

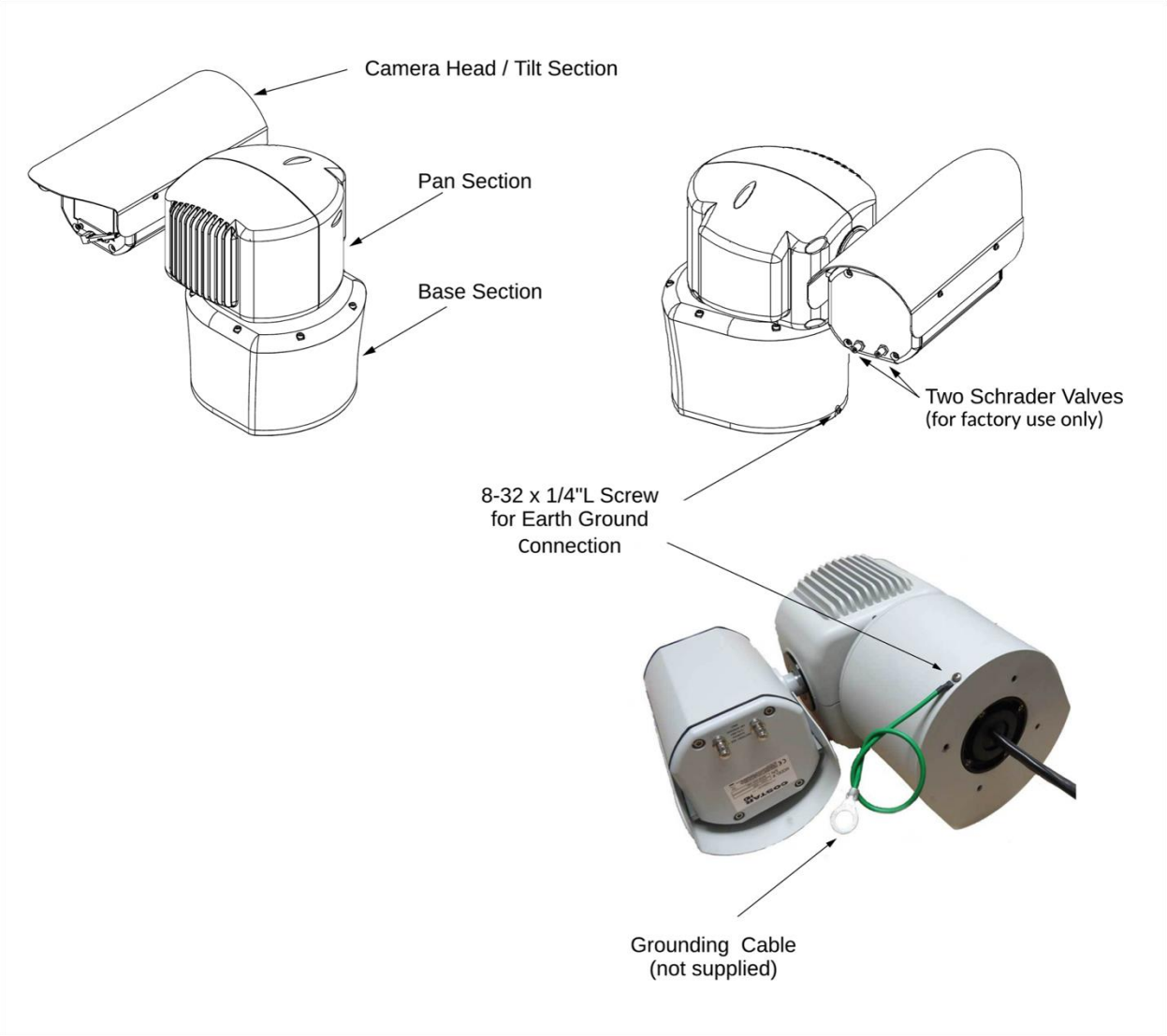
1. CostarHD 4260HD or 4290HD Camera System
2. Accessory Kit:
    - Nitrile Gloves
    - Anti-Seize Compound
    - Mounting Bolt Hardware (4)
3. Documents:
    - Thank You Letter
    - Quick Start Guide
    - Quality Control Checklist (QCL)
    - IP67 RJ45 Coupler Assembly Instructions

Note: If you are missing any items, please refer to section *1.5 Support Services* for assistance.

5.0 Product Overview

5.1 4260HD

The 4260HD Camera System is an IP camera system contained within three independently sealed and environmentally protected sections. The camera system provides IP video streams with H.264 and JPEG compression. The positioning system provides continuous 360° pan (azimuth) motion range with 173° of tilt (elevation). Control interfaces are via Ethernet network connection or optional RS422 serial control.

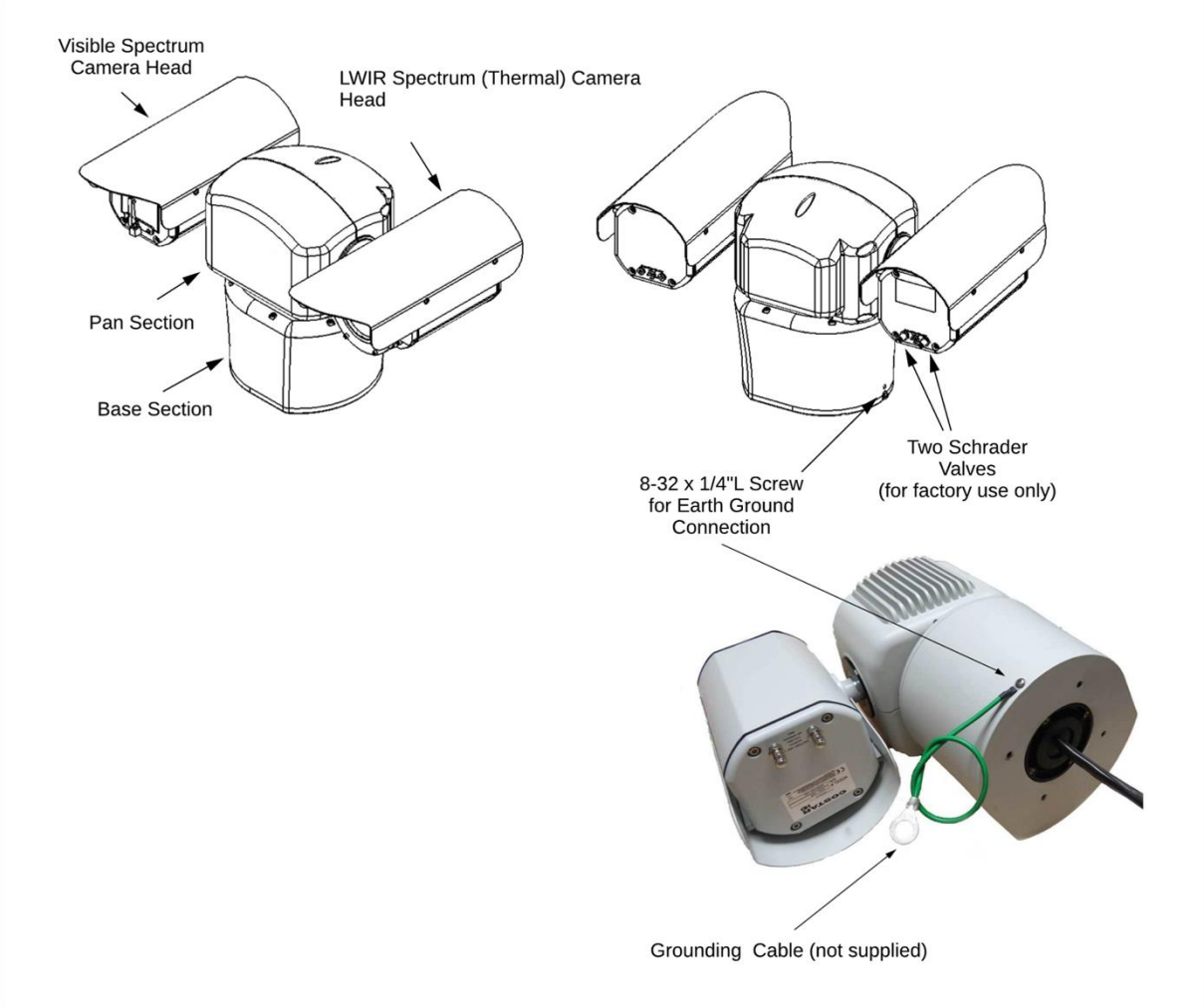


5.2 4290HD

The 4290HD Camera System is a dual head positioning system that provides simultaneous two types of streaming:

- HD visible spectrum imaging streaming
- standard resolution Long Wavelength Infrared (LWIR) night vision imaging streaming

The camera system provides IP video streams with H.264 and JPEG compression. The positioning system provides continuous 360° pan (azimuth) motion range with 180° of tilt (elevation). Control interfaces are via Ethernet network connection or optional RS422 serial control.



5.3 Overall Dimensions and Mounting Base Hole Pattern

Use tables below to determine the dimensions of your camera system:

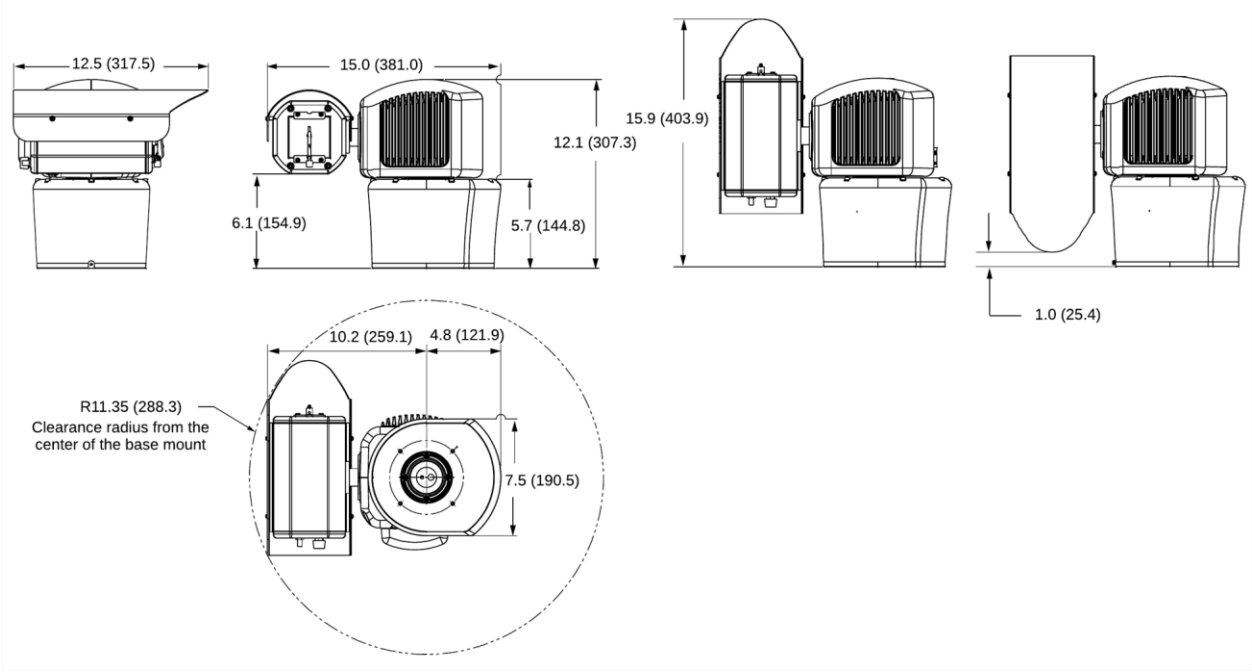
4260HD Series

Model (first four digits)	Configuration	
	A	B
4261	x	
4262	x	
4263	x	
4264	x	
4265	x	
4266	x	
4267		x
4268		x
4269		x
426A		x
426B		x
426C	x	

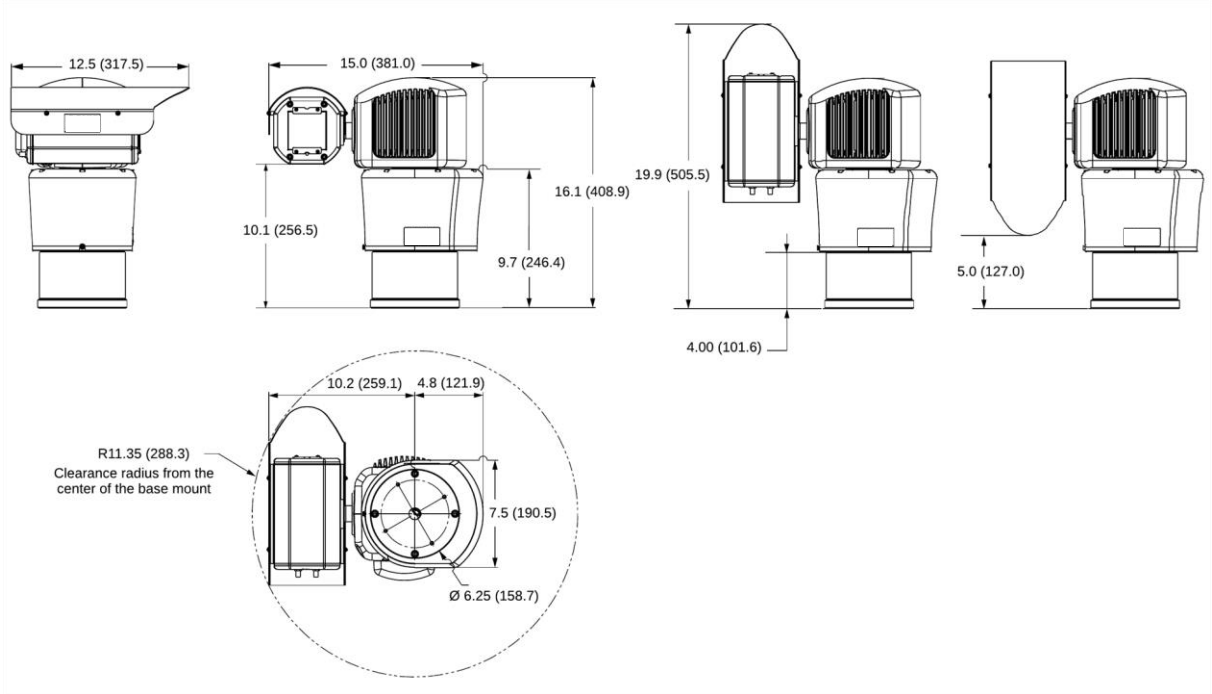
4290HD Series

Model (first four digits)	Configuration	
	C	D
4291	x	
4292	x	
4293	x	
4294	x	
4295	x	
4296	x	
4297		x
4298		x
4299		x

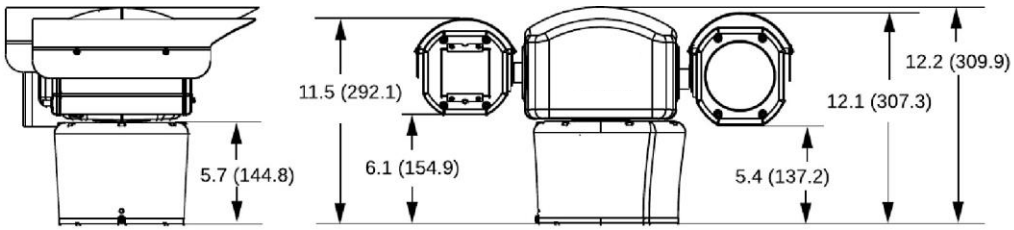
5.3.1 Configuration A Overall Dimensions in inches (mm).

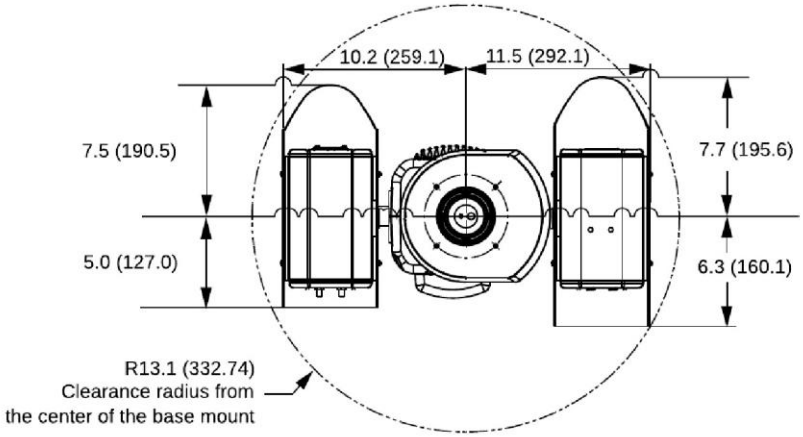


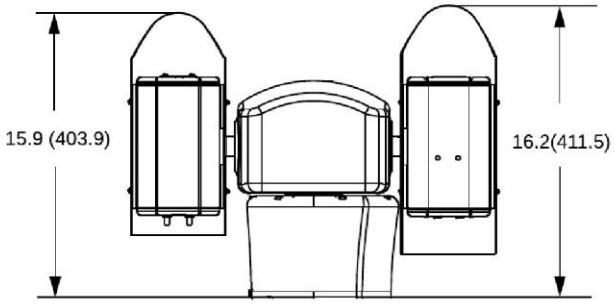
5.3.2 Configuration B Overall Dimensions in inches (mm).

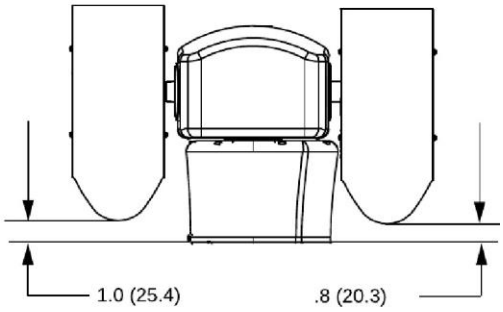


5.3.3 Configuration C Overall Dimensions in inches (mm).

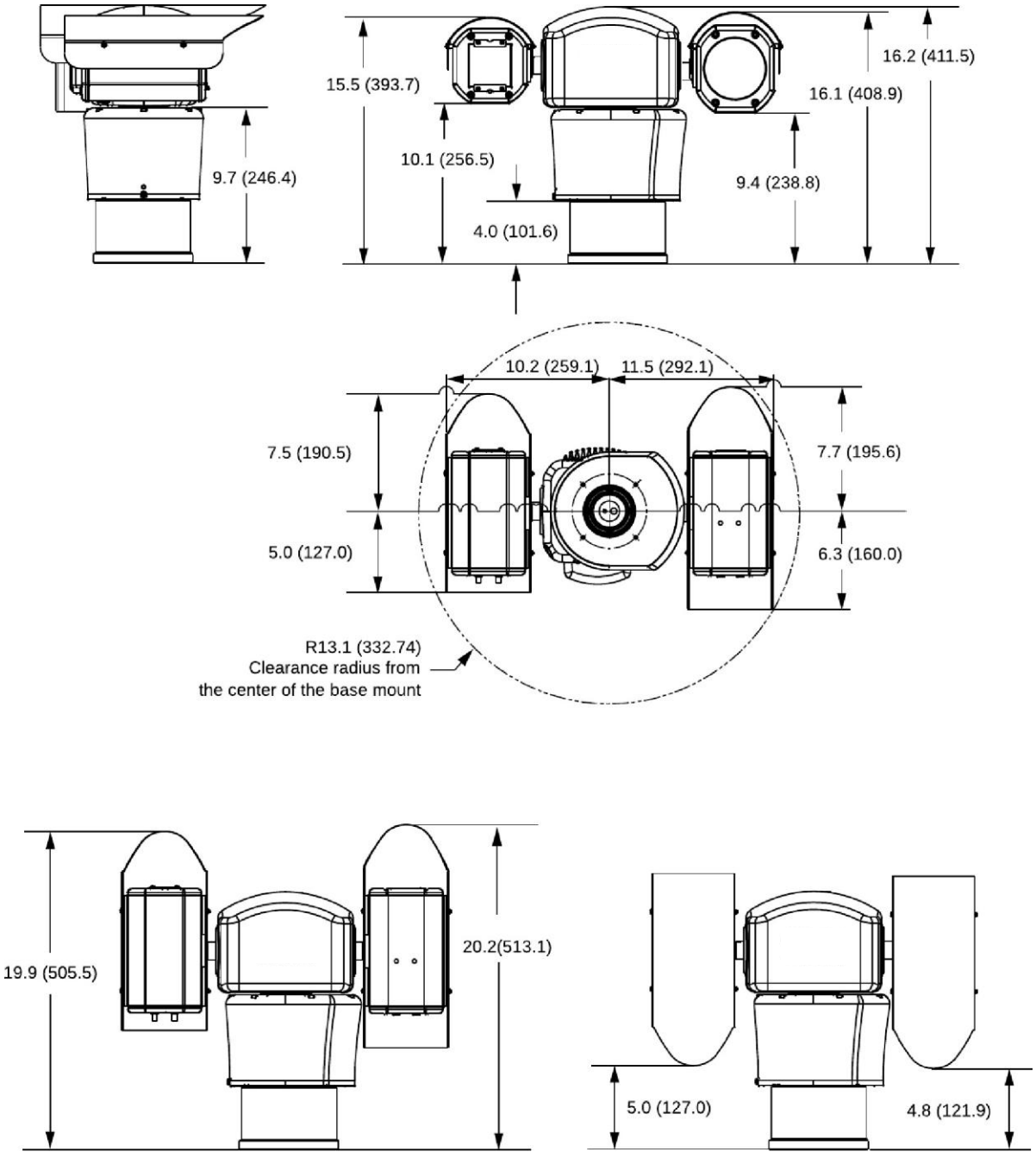




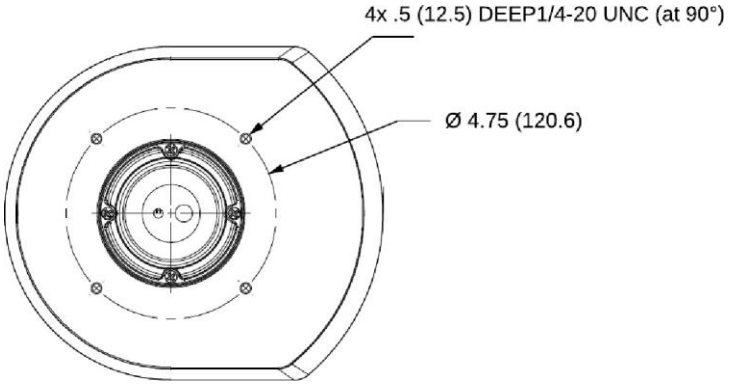




5.3.4 Configuration D Overall Dimensions in inches (mm).



5.3.5 Mounting Base Hole Pattern in inches (mm). Applies to all 4260HD and 4290HD.



6.0 Factory Defaults

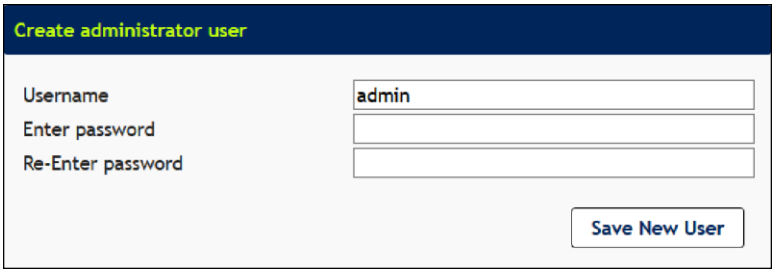
6.1 Factory Default IP Address and Settings

The camera is shipped with the following network settings:

- IP Address: 192.168.2.150
- Subnet mask: 255.255.255.0
- Gateway: 192.168.2.1

6.2 User Names and Passwords

Note: The camera is no longer shipped with a username and password. The first user is admin who has to create a password and then login. Admin is responsible to create/distribute the subsequent user accounts.



Upon logging in for the first time as admin, you are asked to create a password. Enter and re-enter a desired password and click **Save New User**. You are then asked to login using your password.

Note: Usernames and Passwords are both case-sensitive.

Note: The admin changes user passwords after the first login.

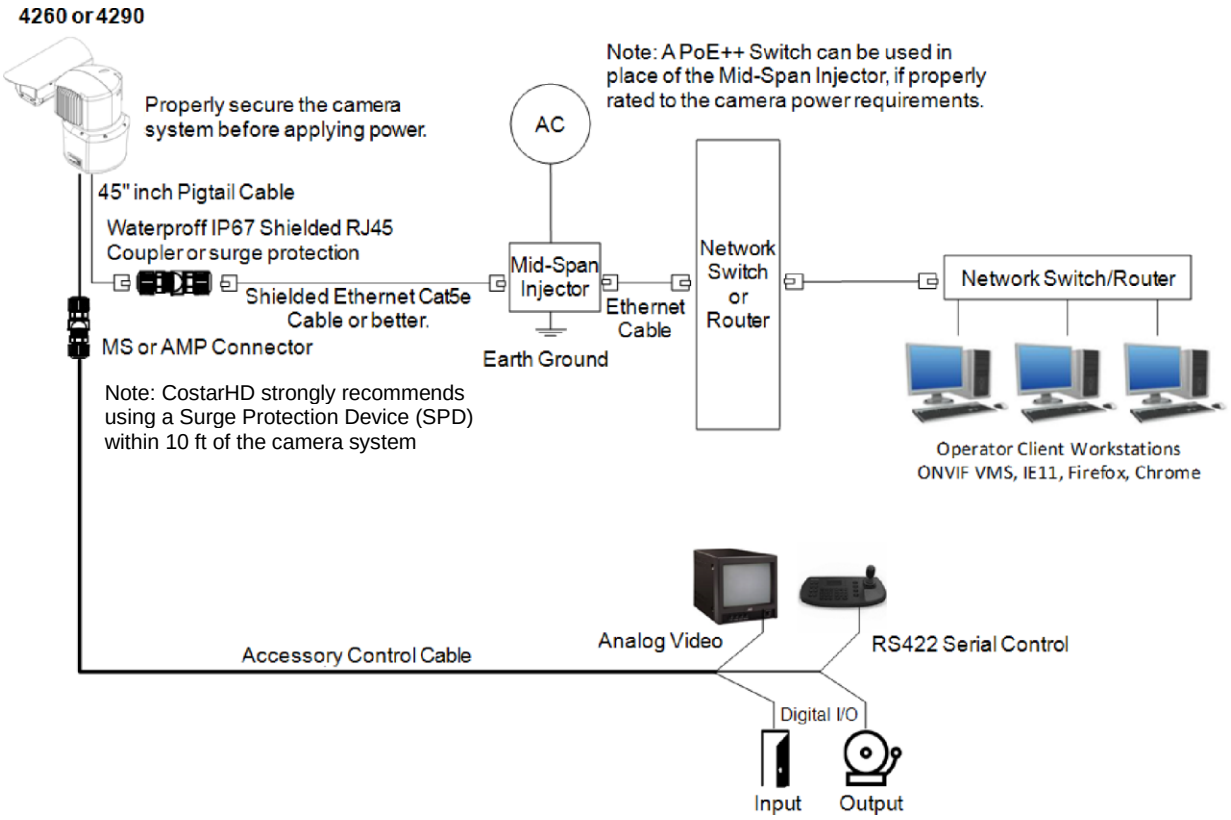
7.0 Connections

7.1 Interconnections

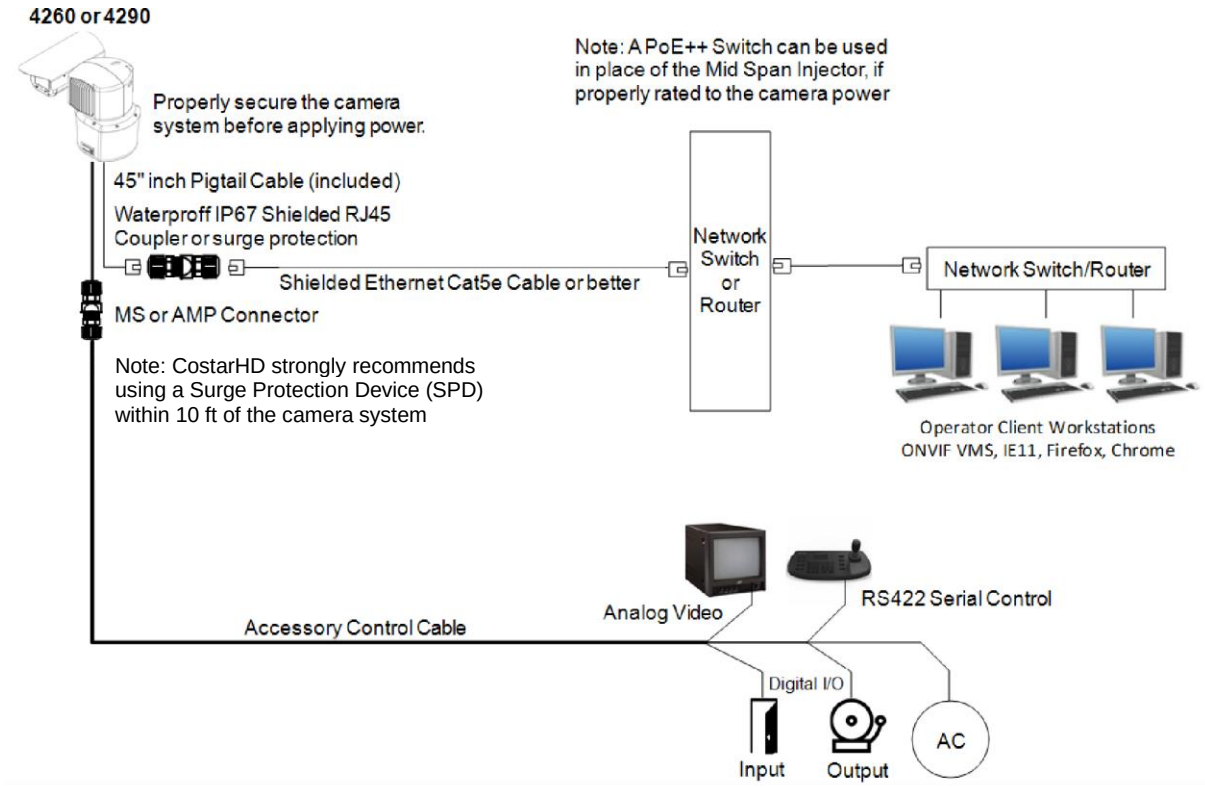
The following are interconnection diagrams for 4260HD and 4290HD camera systems.

Note: The diagrams show the 4260HD series but apply to both camera systems.

7.1.1 Typical, PoE++ Powered



7.1.2 Typical, AC Powered

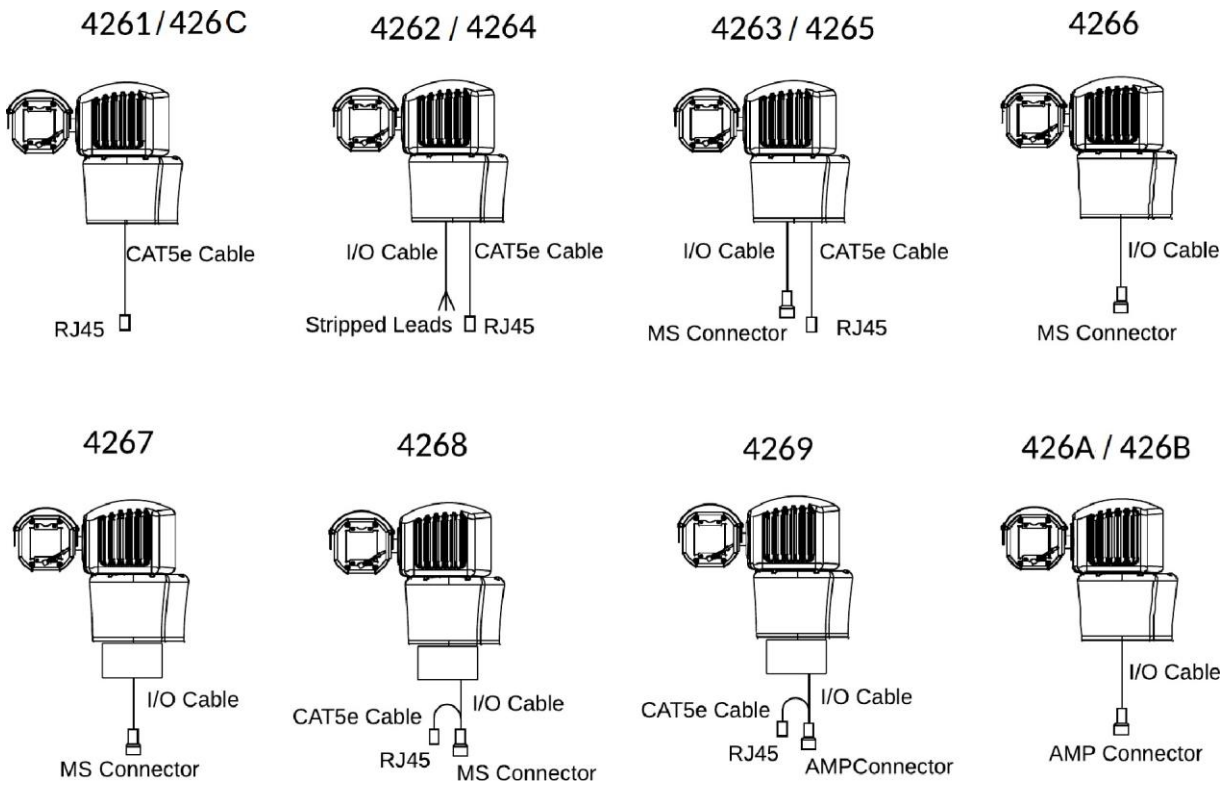


7.2 4260HD and 4290HD Models and Available Cable Functions

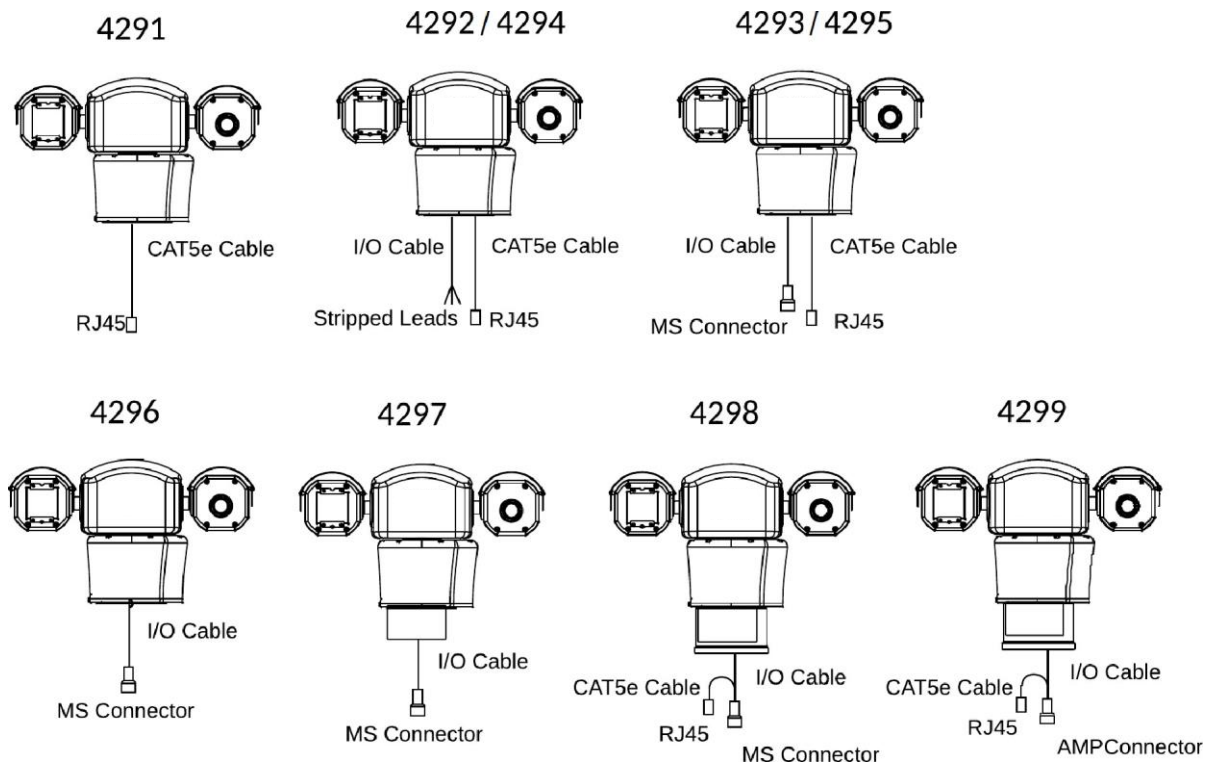
The camera system is built with one or two cables attached to the camera base for electrical connection. The model number identifies the type(s) of cable(s) the camera system requires.

The camera system can be ordered with a combination of two cables. The following pictures show camera models with associated Pigtail Cables:

7.2.1 4260HD Models and Cables



7.2.2 4290HD Models and Cables



7.2.3 Camera Connector Configuration Table

	4260HD Series	4261	4262	4263	4264	4265	4266	4267	4268	4269	426A	426B	426C
Connector Pinout Schematic	A	x	x	x									x
	B		x										
	C			x									
	D				x	x			x	x			
	E				x								
	F					x							
	G						x						
	H							x					
	I								x				
	J									x			
	K										x		
	L											x	
	4290HD Series	4291	4292	4293	4294	4295	4296	4297	4298	4299			

7.2.4 RJ45 Pinout Table

RJ45 Connector Pinouts		
Pin	**Function**	
	Pinout A	**Pinout D**
1	ETHERNET TX+, PoE++ [-]	ETHERNET TX+
2	ETHERNET TX-, PoE++ [-]	ETHERNET TX-
3	ETHERNET RX+, PoE++ [+]	ETHERNET RX+
6	ETHERNET RX-, PoE++ [+]	ETHERNET RX-
5	PoE++ [+]	N/C
4	PoE++ [+]	N/C
7	PoE++ [-]	N/C
8	PoE++ [-]	N/C

7.2.5 Prepped Accessory Cable Wire Definitions Table

Prepped Accessory Cable		
Prepped Wires	**Function**	
	Pinout B	**Pinout E**
ORN	DIO 1	DIO 1
WHT/BLK	DIO 2	DIO 2
RED/GRN	DIO 3	DIO 3
BLU	DIO 4	DIO 4
YEL	N/A	N/A
BRN	I/O COMMON	I/O COMMON
WHT (26 AWG)	RS422 RX+	RS422 RX+
BLK (26 AWG)	RS422 RX-	RS422 RX-
RED (26 AWG)	RS422 TX+	RS422 TX+
GRN (26 AWG)	RS422 TX-	RS422 TX-
COAX VIDEO (WHT)	ANALOG VIDEO OUTPUT	ANALOG VIDEO OUTPUT
COAX SHIELD (BLK)	ANALOG VIDEO SHIELD	ANALOG VIDEO SHIELD
BLK (22 AWG)	N/C	24 VAC
WHT (22 AWG)	N/C	24 VAC

7.2.6 MS Pigtail Cable Pinouts Table

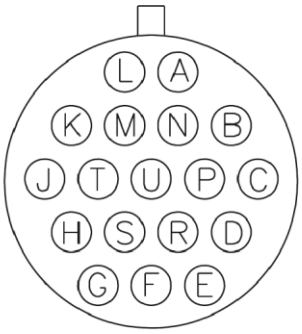
MS Cable					
MS Connector	**Function**				
Pin	**Pinout C**	**Pinout F**	**Pinout G**	**Pinout H**	**Pinout I**
C	DIO 1	DIO 1	DIO 1	DIO 1	DIO 1
K	DIO 2	DIO 2	DIO 2	DIO 2	DIO 2
J	DIO 3	DIO 3	DIO 3	DIO 3	DIO 3
P	I/O COMMON	I/O COMMON	I/O COMMON	I/O COMMON	I/O COMMON
M	RS422 RX+	RS422 RX+	RS422 RX+	RS422 RX+	RS422 RX+
N	RS422 RX-	RS422 RX-	RS422 RX-	RS422 RX-	RS422 RX-
S	RS422 TX+	RS422 TX+	RS422 TX+	RS422 TX+	RS422 TX+
R	RS422 TX-	RS422 TX-	RS422 TX-	RS422 TX-	RS422 TX-
L	ANALOG VIDEO OUTPUT	ANALOG VIDEO OUTPUT	ANALOG VIDEO OUTPUT	ANALOG VIDEO OUTPUT	ANALOG VIDEO OUTPUT
A	ANALOG VIDEO SHIELD	ANALOG VIDEO SHIELD	ANALOG VIDEO SHIELD	ANALOG VIDEO SHIELD	ANALOG VIDEO SHIELD
B	N/A	24 VAC	24 VAC	N/C	N/C
T	N/A	24 VAC	24 VAC	120 VAC LO	120 VAC LO
G	CHASSIS	CHASSIS	CHASSIS	CHASSIS	CHASSIS
U	N/C	N/C	N/C	120 VAC HI	120 VAC HI
H	N/C	N/C	ETHERNET RX-	ETHERNET RX-	N/C
D	N/C	N/C	ETHERNET TX+	ETHERNET TX+	N/C
E	N/C	N/C	ETHERNET TX-	ETHERNET TX-	N/C
F	N/C	N/C	ETHERNET RX+	ETHERNET RX+	N/C

7.2.7 AMP Pigtail Connector Pinouts Table

AMP Cable			
AMP Connector	**Function**		
	Pinout J	**Pinout K**	**Pinout L**
3	I/O COMMON	I/O COMMON	RS422 TX-
6	RS422 RX+	RS422 RX+	CHASSIS
7	RS422 RX-	RS422 RX-	ETHERNET TX-
5	RS422 TX+	RS422 TX+	ETHERNET TX+
4	RS422 TX-	RS422 TX-	RS422 TX+
1	ANALOG VIDEO OUTPUT	ANALOG VIDEO OUTPUT	RS422 RX-
2	ANALOG VIDEO SHIELD	ANALOG VIDEO SHIELD	RS422 RX+
12	120 VAC HI	120 VAC HI	ETHERNET RX-
13	120 VAC LO	120 VAC LO	120 VAC LO
15	AC GROUND	AC GROUND	N/C
14	CHASSIS	N/C	120 VAC HI
8		ETHERNET TX+	ANALOG VIDEO OUTPUT
9		ETHERNET TX-	ANALOG VIDEO SHIELD
10		ETHERNET RX+	AC GROUND
11		ETHERNET RX-	ETHERNET RX+

7.2.8 18-pin MS Type (Metal) Connector and its Mating System Cable Connector

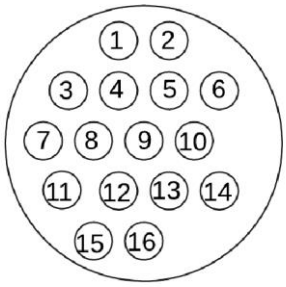
- Camera connector: CostarHD p/n 1310230-117
- Mating connector: CostarHD p/n 1310230-111 (ordered separately)



1310230-111
Viewed from the Wiring End

7.2.9 Amp Type (Plastic) Connector Kit and its Mating System Cable Connector Kit

- Camera connector kit: CostarHD p/n 8498-1
- Mating connector kit: CostarHD p/n 8498-3



1310307-009
Viewed from the Wiring End

7.2.10 Digital Inputs/Outputs (DIO)

The camera system can be configured with up to four inputs or four outputs. Each pin can be set as an input or output. The number of inputs/outputs depends on which I/O cable is ordered:

- Cable with stripped leads: Four inputs or four outputs are available.
- Cable with MS connector: Three inputs or three outputs are available.

7.2.10.1 Inputs

The inputs can be configured to initiate an event either when a contact closure between an Input and I/O Common is detected or when an open circuit between an Input and I/O Common is detected.

Caution: Do not connect a power source to the inputs.

7.2.10.2 Outputs

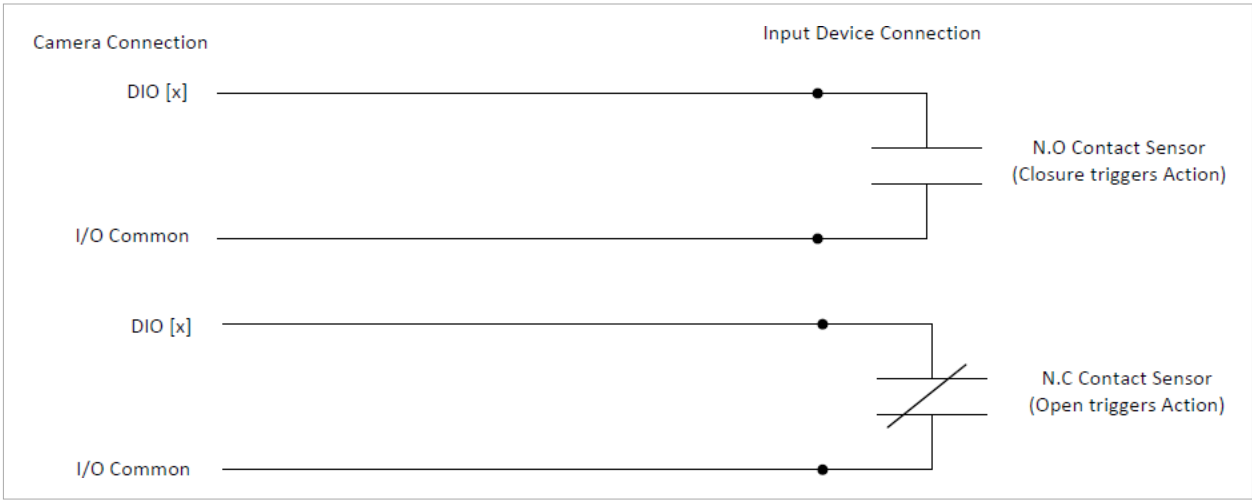
The Outputs can be set up to be latched or momentary with programmable momentary duration. When an event is generated by the camera the Output acts as a relay to control external components.

Caution: The source voltage for any Output must not exceed 60 Vdc, and the maximum current must not exceed 500 mA.

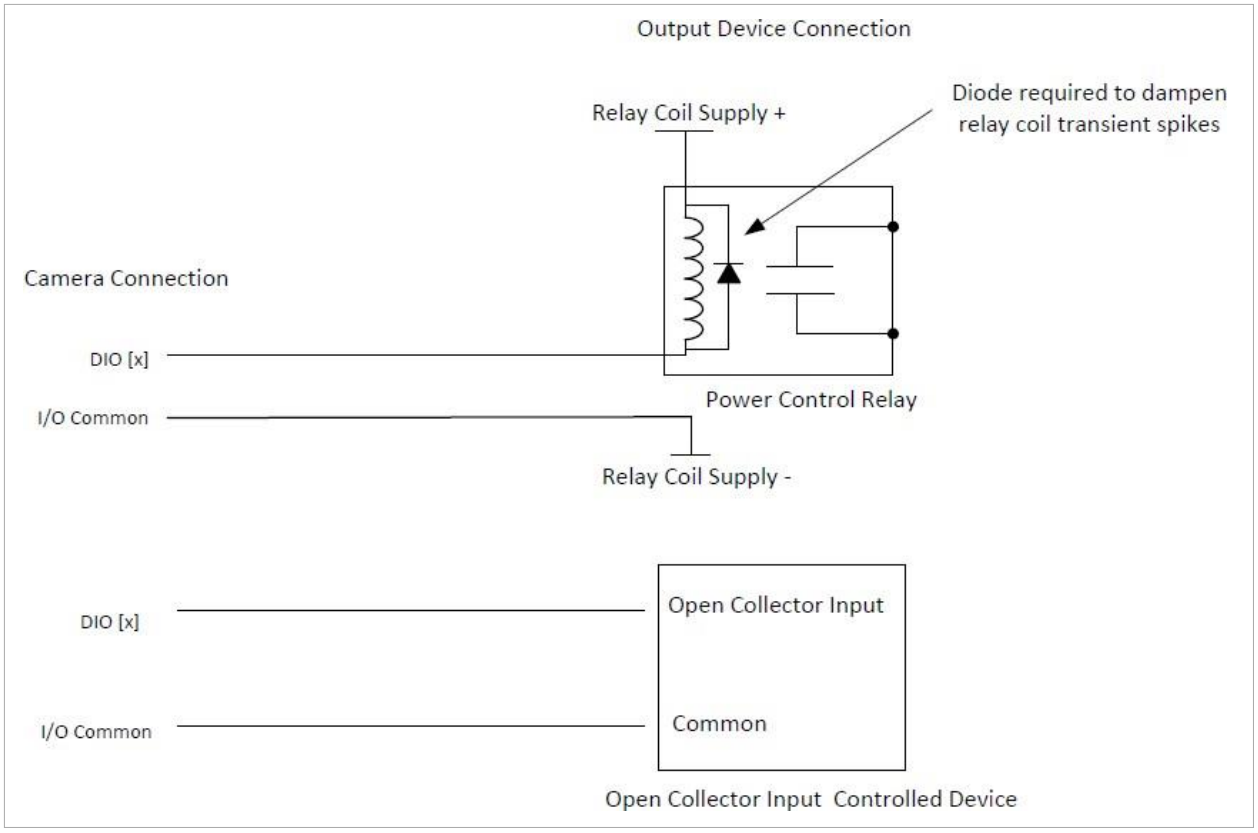
7.2.10.3 Wiring Digital Inputs/Outputs (DIO)

The following are interconnection diagrams for the DIO circuits for input and output device applications. Refer to appropriate camera system model number connector diagram for I/O pin numbers.

Digital Input Wiring Example



Digital Output Wiring Example

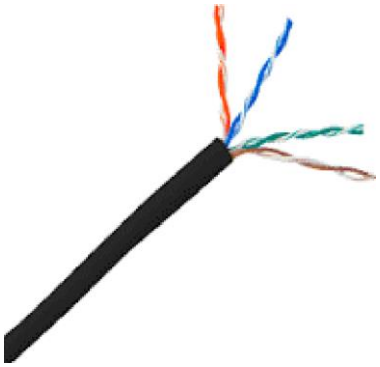


7.2.11 Field Cables

- All system cables must be shielded, and the shield(s) must be bonded to earth ground.
- All Ethernet wiring must be done in accordance with TIA/EIA 568-C standards.

To build the camera system cables, CostarHD recommends:

- **For Ethernet/PoE++**: CostarHD p/n 7610179-001.



Note: The maximum cable length for Ethernet is 100 m (328'). However, other factors may reduce the distance Ethernet can be successfully used, such as EMI from other sources.

When wiring to the Ethernet pins, consider whether they are to be wired for the NIC (Network Interface Card) in a PC or for system connections to a hub, switch, router, or similar device.

Ethernet Cable Wiring to a Hub, Switch, or Router (Straight Wiring)

Ethernet Function	Corresponding RJ-45 Ethernet Pins
TX+	1
TX-	3
RX+	3
RX-	6
This Ethernet wiring is intended to connect directly to a hub, switch, or router. For connection directly to a PC, it will be necessary to use either a crossover cable or a crossover adapter. Note: For clarity, only signal lines are shown.	

Ethernet Cable Wiring to a PC (Crossover Wiring)

Ethernet Function	Corresponding RJ-45 Ethernet Pins
TX+	3
TX-	6
RX+	1
RX-	2
This Ethernet wiring is intended to connect a camera to the NIC card in a PC. Note: For clarity, only signal lines are shown.	

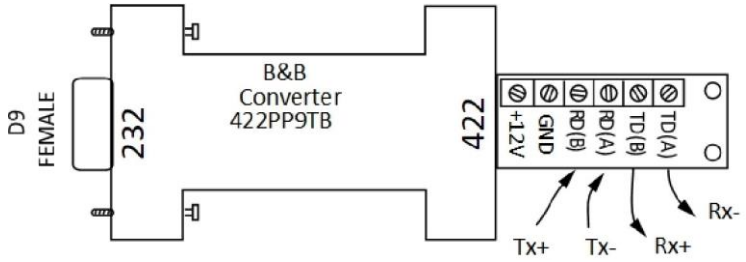
Wiring to the PoE pins is the same for the NIC in a PC as for system connections to a hub, switch, router or similar device.

- **For Power**: Two wires, insulated for 300 V minimum, 18 AWG cord for power. Use for distances up to 80 feet (29 m) for 24 V cables.

Note: Long cable lengths and/or low mains voltages can cause the 24 V power at the camera to drop below the minimum input voltage (24 V -10%) resulting in unreliable operation.

- **For I/O**: Four wires, insulated for 300 V minimum, 24 AWG. Use for distances up to 250 feet (76.2 m).
- **For Analog Video**: The coax cable for analog video must be rated at 75 ohms, and must not exceed a maximum attenuation of 6 dB at 10 MHz for the length of cable required.
- **For Data**: A shielded two twisted pair data cable is recommended. For lower baud rates (9,600 or less), the Belden 8723 shielded cable is usually suitable for distances up to 750 feet.
- **If the RS422** interface is used for sending and receiving serial data, an RS232/422 converter is used between the camera system and a computer.

Typical RS232/422 Converter



RS422 Cable Wiring to B&B Converter

Camera Side	Converter Side
RS422 Camera	**RS422 Device**
RS422 RX+	TD(B)
RS422 RX-	TD(A)
RS422 TX+	RD(B)

Warning: Connecting certain cables to the 4260HD or 4290HD Series camera systems can result in permanent damage to the camera. Do not connect any cable to a 4260HD or 4290HD camera system without verifying compatibility first.

8.0 Waterproof Coupler Assembly

8.1 Parts

The coupler comes assembled with extra two large diameter cable seals for thicker cables.

The coupler package consists of the following parts:

1. Sealing Nut (2pcs)
2. Seal
    a. a. Small diameter cable (2 pcs) – already inserted
    b. b. Large diameter cable (2 pcs) – extra separately
3. Coupler Body
4. Washer for Coupler Body
5. Two-Way RJ45 Port for Coupler Body
6. Sealing Collar

Note: If you are missing any items, please contact CostarHD Customer Service Department for technical assistance at (858) 391-1800 option 2.

Note: Installation Manuals are available at CostarHD website at: http://www.costarhd.com/Support/Product-Documentation

8.2 Assembly

Warning: Do not use tools. All parts must be hand assembled.

1. Using the head of a pencil or another non-sharp object, push the Seal (2) out of the Sealing Collar (6)

2. If the RJ45 plug has a strain-relief boot, push it away from the RJ45 plug. The strain-relief boot will not be used.

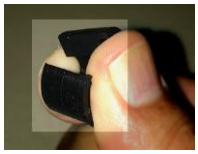
3. Pass the cable through the Sealing Nuts (1)

4. Pass the cable through the Sealing Collar (3).

5. Insert the Washer and the Two-Way RJ45 Port (5) in the Coupler Body (3) (if disassembled).
6. Insert the RJ45 plug into the Coupler Body (3).

7. Attach the Sealing Collar (6) to the Coupler Body (3). Make sure it is tightened completely.

8. Select the desired Seal (2) and press to open notch.



9. Insert the Seal (2) onto the cable with the recessed surface facing the Sealing Collar (6), then push the Seal (2) all the way into the Sealing Collar (6).

The Seal (2) should sit completely flushed inside the fingers of the Sealing Collar with edge not protruding.

10. Now attached the Sealing Nut (1) to the connected Sealing Collar (6).

Warning: Tighten by hand and do not over-tighten. Using tools and over-tightening may split the Seal's notch, which compromises the waterproof assembly.

The Seal's notch should join without a flaw.

11. Repeat the steps to connect the network cable to the other side of the coupler.

8.0 Best Practices

The purpose of this section is to provide recommendations regarding the proper selection and use of Surge Protection Devices (SPDs) in CCTV systems.

This section is not meant to provide guidance for SPDs selection, placement, and use on incoming utility power. Always follow local and national electric code and refer to licensed electricians or other trained professionals for guidance.

Surge Protection Devices are designed to prevent damage to equipment caused by transient voltages from a number of possible sources. Due to their exposure to the environment, when planning the installation of a CostarHD camera system, SPDs must be appropriately installed.

Depending on the exact equipment being installed, one or more SPD types must be used to properly protect from damage caused by electrical surge. There are several types of SPDs:

- AC Power SPDs
- Ethernet SPDs
- Power over Ethernet (PoE) SPDs
- Analog Video SPDs
- Low-Voltage DC (Serial Data) SPDs

Each SPD type is designed for a specific application and is only rated to work within the nominal voltage levels of that application. To provide protection, it is critical that the SPD for your application be of the appropriate type and ratings. Refer to the SPD manufacturer for proper device selection for your application.

Placement of SPDs is critical. Per IEEE, NEMA, and industry guidelines, an SPD should be installed within four feet of the equipment it is protecting. Additionally, SPDs should be installed at each end of all cables greater than thirty feet in length. In most CCTV applications, this means that a minimum of two SPDs must be used: one near the camera, and one in the control cabinet that provides network connectivity and power.

Proper orientation is key on many SPDs as they often have PROTECTED and UNPROTECTED terminals, or DEVICE and LINE terminals. For a typical CCTV application, the UNPROTECTED or LINE terminals should be used to connect the upper and lower SPDs, while the PROTECTED or DEVICE terminals should connect to the camera and network switch (or PoE injector). An incorrectly oriented SPD will appear to function as voltage will still pass through it, however when installed backwards, the device will not provide full protection. Always verify the orientation of each SPD and contact the manufacturer for assistance.

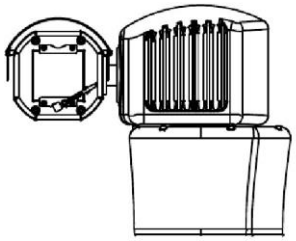
Lastly, an SPD can only function if it is properly grounded. Unless a lower value is required to meet your local or project-specific specifications, the grounding array that the SPD is connected to should be no more than 10Ω. All wiring from the ground connection of the SPD should be as short and straight as possible, and all connections should be properly crimped and securely fastened.

9.0 Installation

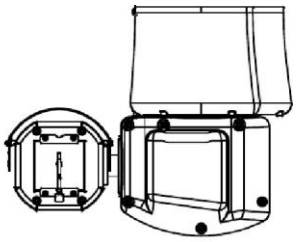
9.1 Installation Methods

The 4260HD and 4290HD camera systems are available in the following mount configurations:

- Standard
- Inverted



Standard Installation



Inverted Installation

9.1.1 Inverted Mount Configuration

When installed in the inverted position, the camera orientation and control functions are reconfigured through the software via browser interface.

Use the following steps to reconfigure the software for inverted mounting:

Note: No hardware adjustment is required.

1. In the Setup Page, click the *Positioner* tab.
2. In the Positioner Settings Panel under Inverted Mounting, select the **On** button.
   Turning on the Inverted Mounting button rotates the tilt 180° so the camera is still right side up and reverses the pan & tilt directions. See Operation Manual 6x-1115, "Positioner: section.

9.2 4260HD and 4290HD Camera Systems Mounts

The 4260HD and 4290HD series are designed for outdoor installation.

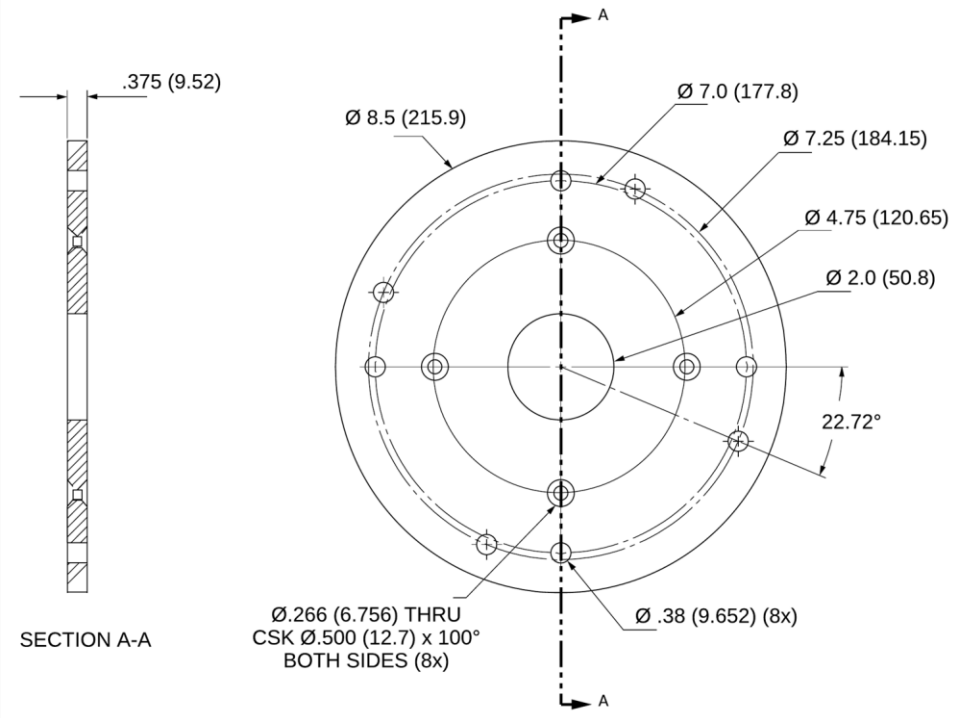
For installation:

- Use stainless steel (SS) hardware to fasten the camera system to the mounting bracket and mounting brackets to surfaces.
- Use anti-seize compound in order to prevent galling on the threads.
- Use gasket materials, if needed.
- Use a sealant wrap on the camera system waterproof connectors and their mating system cable plugs for additional protection against moisture in severe conditions. CostarHD recommends Coax-Seal®.
- Mounts, poles, and metallic conduits must be bonded to earth ground.

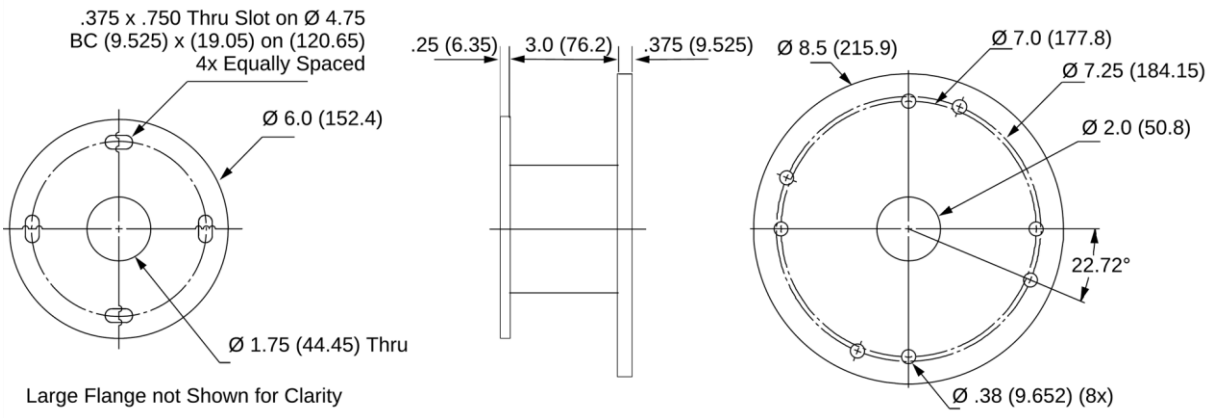
9.2.1 Mounting Brackets Dimensions

All dimensions in inches (mm).

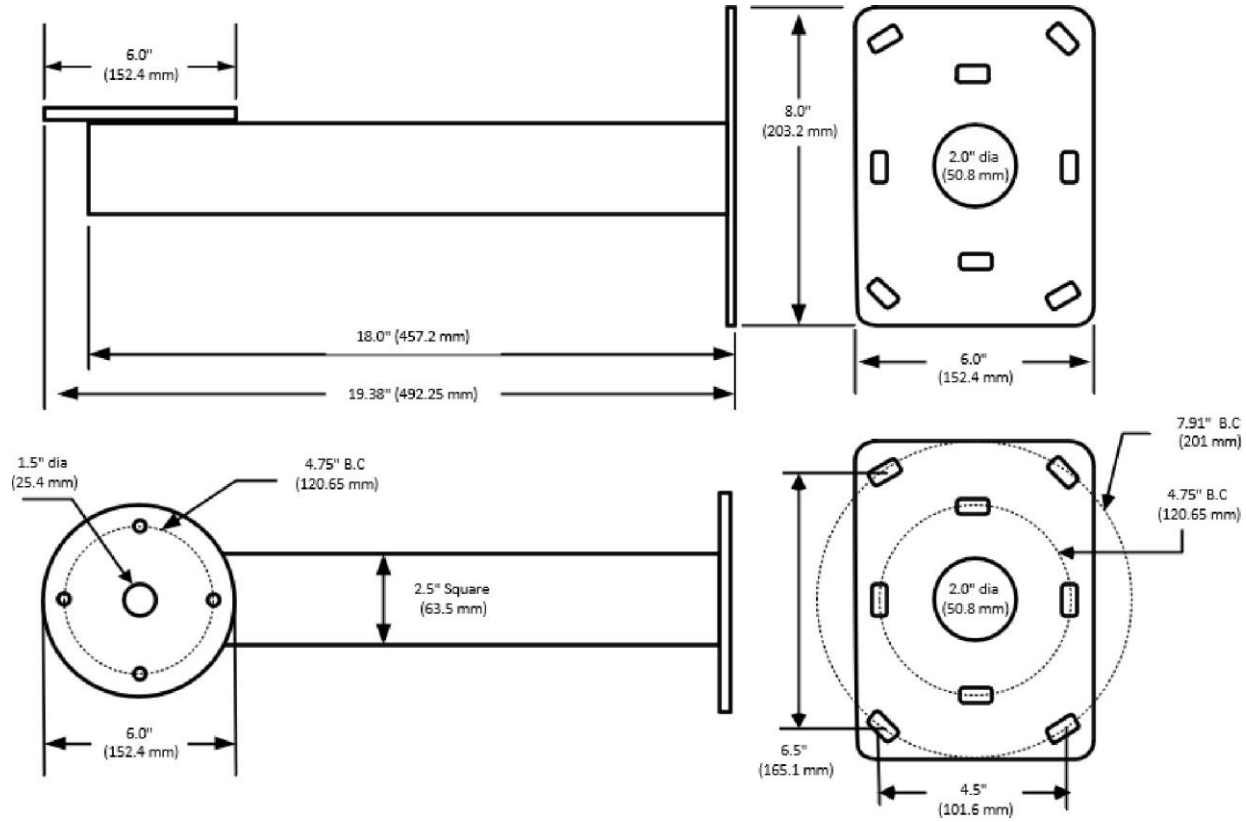
9.2.1.1 Large Pedestal Plate



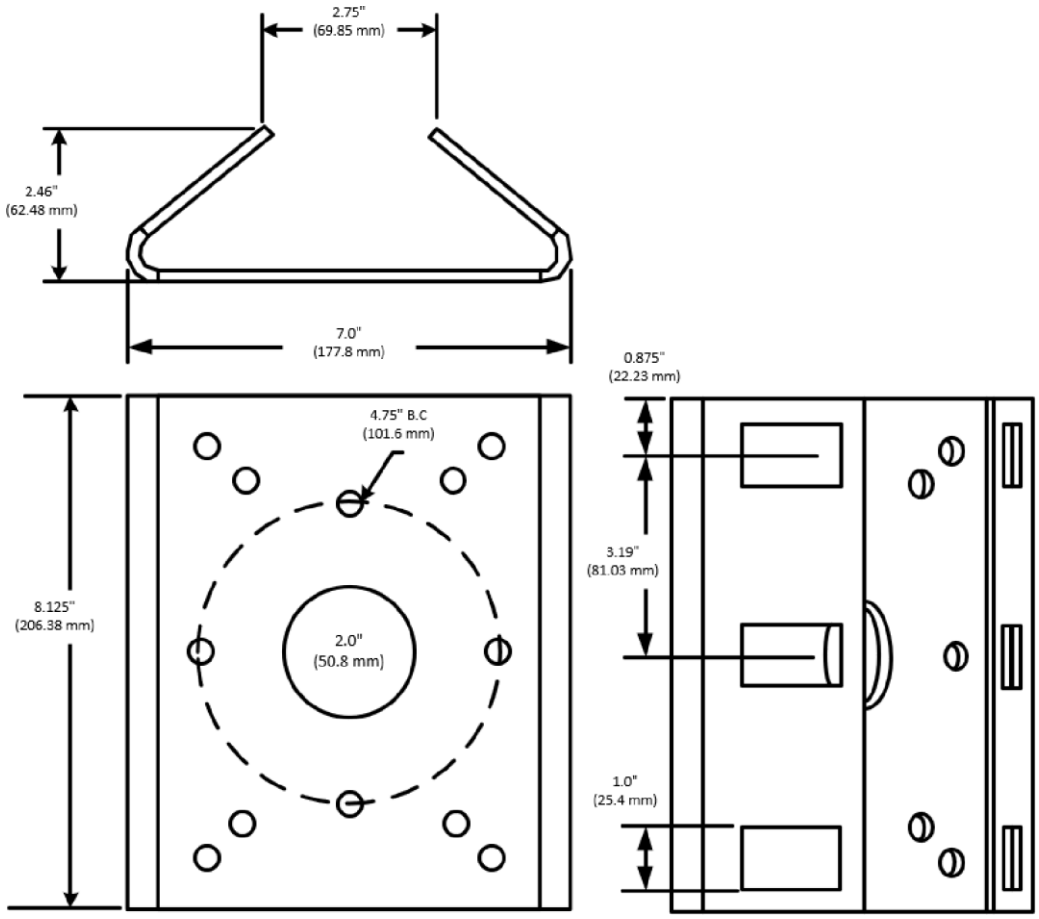
9.2.1.2 Large Pedestal Adapter



9.2.1.3 Wall Mount Bracket, p/n 8425-7



9.2.1.4 Pole Mount Adapter, 8188275-002



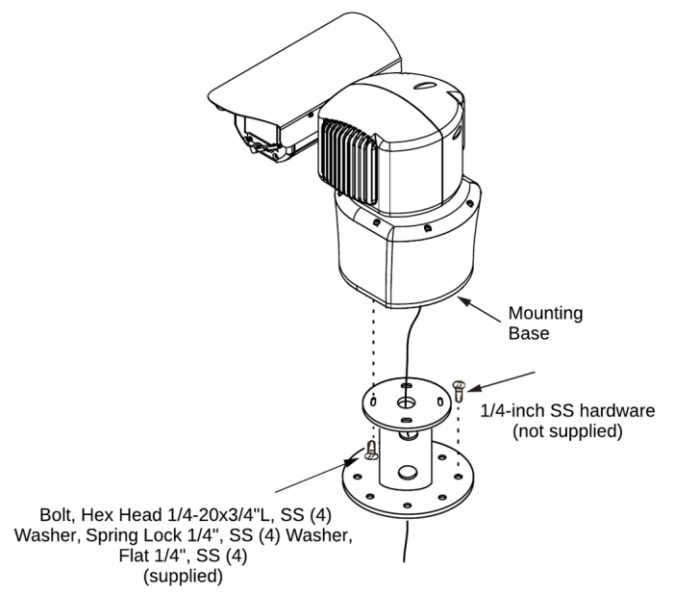
9.2.2 4260 and 4290 Camera Systems Mounting Diagrams

The following are mounting diagrams for 4260HD and 4290HD camera systems.

Note: The diagrams show the 4260HD series but apply to both camera systems.

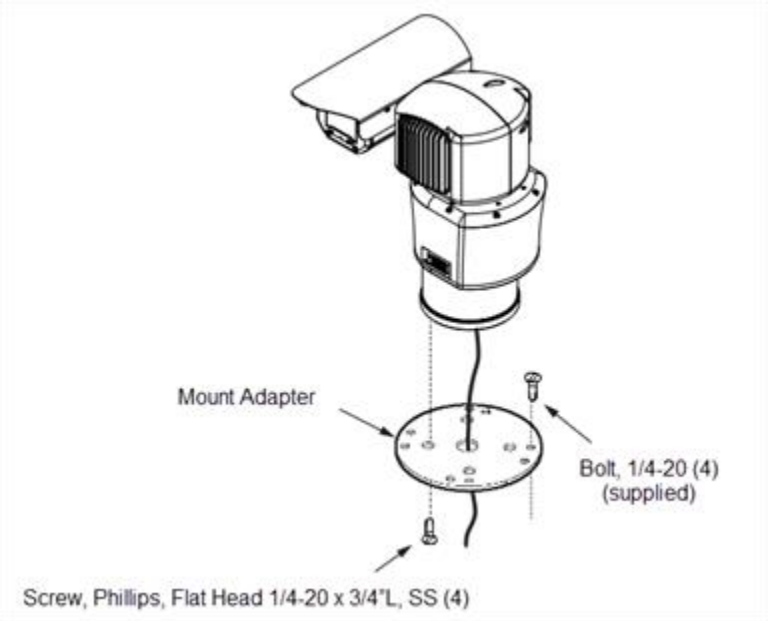
9.2.2.1 Large Pedestal Adapter for the PoE and 24 Vac Power Option

Use the large pedestal adapter for additional mounting hole patterns. *"Large Pedestal Adapter" on page 35*.



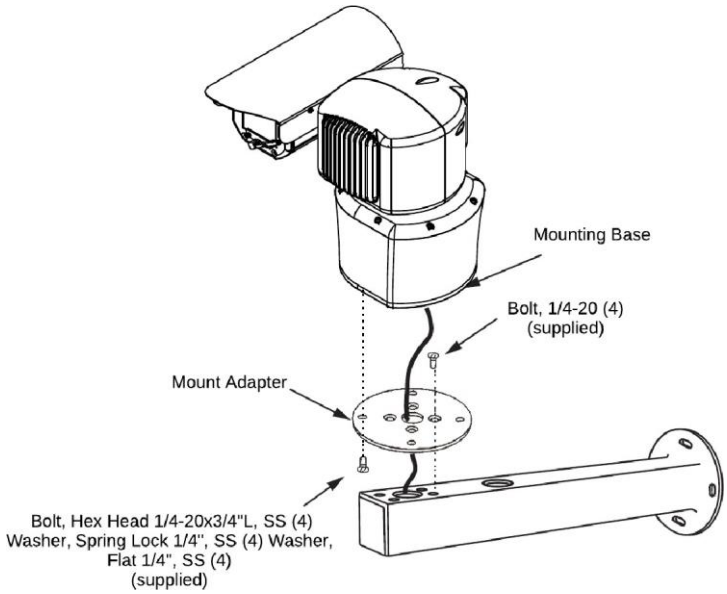
9.2.2.2 Large Pedestal Plate for the 120 Vac Power Option

Use the large pedestal plate for additional mounting hole patterns. *"Large Pedestal Plate" on page 35*.



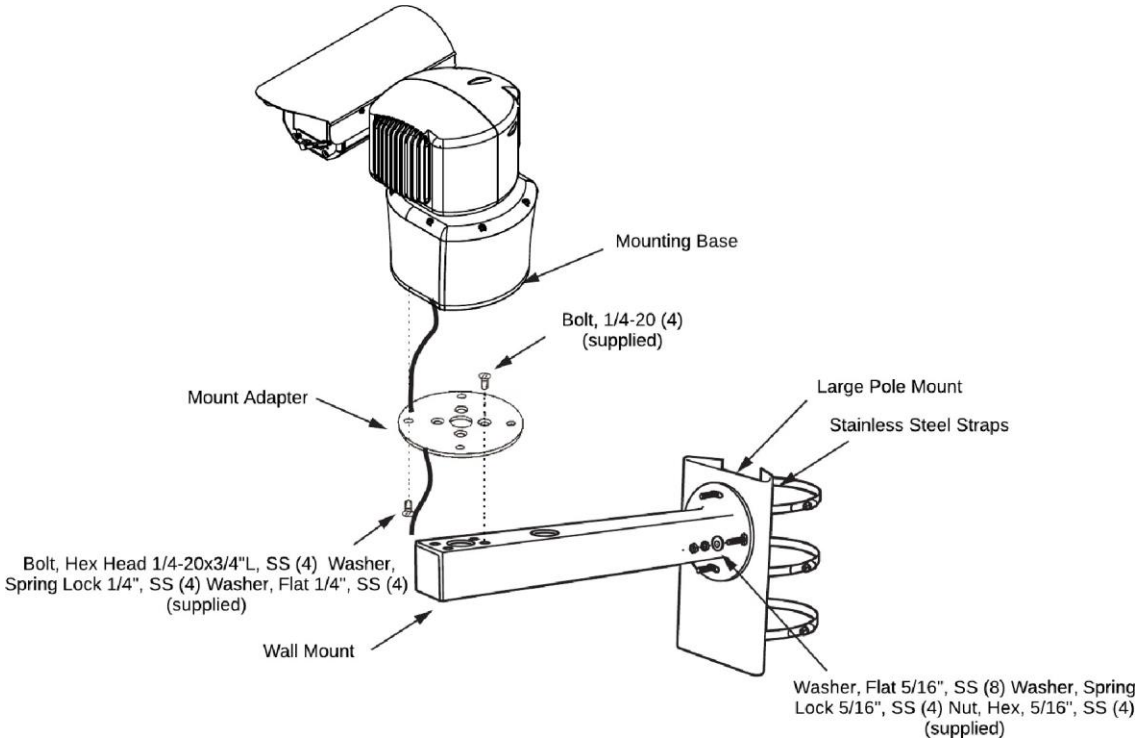
9.2.2.3 Wall Mount

Use the mount adapter and wall mount for installation to a wall. *"Wall Mount Bracket, p/n 8425-7" on page 36*.



9.2.2.4 Pole Mount

Use the mount adapter, wall mount, and large pole mount for installation to a pole. *"Pole Mount Adapter, 8188275-002" on page 37*.



9.3 Installation Procedure

Warning: Always support a camera until it has been fastened securely.

Caution: Do not use the cable to support the weight of the camera.

Provisions must be made for routing the system cable up to the camera system location:

- Pole: If the cable routes up through the pole, support the cable inside the pole to strain relieve the camera connector.
- Pedestal: Route the cable down into the pedestal. The cable must be secured by a strain relief within the pedestal and must not be allowed to hang free through the pedestal.

The sequence of installation can vary from site to site:

- Verify that the system cable is accessible for connection to the camera system connector at the mounting location.
- Prepare the wall for installation: Use the mount as a template. Mark and drill holes in the mounting surface.
- Install mounts. For mounting on:
    - A corner: Use the corner mount as a template. Mark and drill holes in the mounting surface. Position the mount over the mounting holes. Secure with fasteners (not supplied). Drill a hole for the cable, if required.
    - A pole: Position the pole mount on the pole and secure with the stainless steel mounting straps (supplied). Use a flat blade screwdriver or 5/16-inch socket wrench (not supplied) to tighten strap screws.
    - A parapet: Fasten the parapet mount adapter to the structure.

        1. Slip the upper and lower mounting brackets onto the tube assembly. The bracket with the strap on the lower end is installed last. Seat the bottom of the tube against the strap and snug the U-bolt.
        2. Hold the parapet mount assembly against the parapet and position it as far down as possible, so that the 6-inch flange clears the top of the parapet by one or two inches.
        3. Slide the upper mounting bracket up to the edge of the parapet (or as close to the edge as practical) and anchor the fasteners securely. Snug the U-bolt and mark the drill pattern.
        4. Drill holes, insert fasteners, and secure to the parapet.

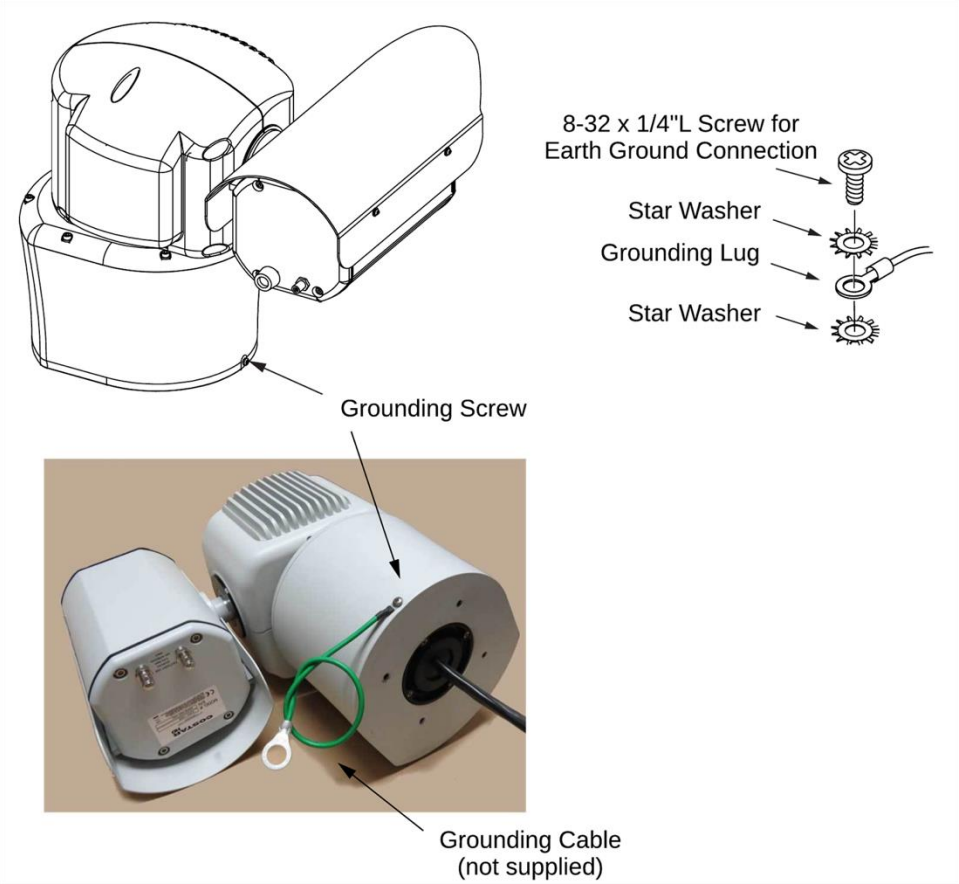
- Install the mount adapter to the wall mount with four 1/4-inch fasteners (supplied).
- Install the wall mount. For mounting on:
    - A wall: Position the wall mount over the mounting holes. Attach with four 5/16-inch fasteners (not supplied).
    - A pole or corner: Attach the wall mount to the studs on the large pole or large corner mount and secure with the 5/16-inch nuts and washers (supplied).
    - A parapet: Position the wall mount over the flange holes. Secure with four 5/16-inch fasteners (not supplied).

- Install the camerasystem:
  - Position the camera on the mount adapter/plate or pedestal and secure it with the 1/4-inch fasteners (supplied).

    Note: For easy installation, look for two alignment marks on the base housing for hole location.

- **Ground the camera:**

  Connect the grounding wire to the grounding screw on the camera's base. Use 16 AWG wire. The wire must be bonded to earth ground as close to the camera system as possible. Star washers must be on both sides of the lug of the grounding cable when attached to the camera's base. Refasten the screw securely. Recommended torque: 5.3 in-lb.



- Applies to models 4261HD - 4265HD, 4268HD, and 4269HD: Connect two outdoor Ethernet cables together using the IP67-rated weatherproof RJ45 coupler. *See* *Waterproof Coupler Assembly*

9.0 Camera URLs

9.4 Camera Default Passwords

- User = `admin`
- Password = `admin`

9.5 Network Video Ports Required for RTSP

- 554 - RTSP uses TCP or UDP as its transport protocol.
- UDP Ports: Self-Determined

9.6 Video Stream Connection URL's

Note: Do not include brackets < > in connection URL strings.

RTSP/RTP Unicast and RTSP Interleaved

Connection String: `rtsp://<ipaddress>/<Presentation Name>`

Presentation Names: `<Stream0 up to Stream7>`

HTTP Tunneling

Connection String: `http://<ipaddress>/streaming/<PresentationName>`

VLC Connection String: `rtsp://<ipaddress>/streaming/<PresentationName> Presentation Names: <Stream0 up to Stream7>`

RTP Multi-Cast

Connection String: `rtsp://<ipaddress>/multicast/<PresentationName>`

Presentation Names: `<Stream0 up to Stream7>`

-OR-

Connection String: `http://<ipaddress>/sdp/<PresentationName>.sdp`

Presentation Names: `<Stream0 up to Stream7>`

MJPEG Pull Using HTTP

Connection String: `http://<ipaddress>/jpegpull/<Presentation Name>`

Presentation Names: `<Stream0 up to Stream7>`

Note: A JPEG encoder must be configured for stream.

-OR-

Connection String: `http://<ipaddress>/jpegpull/snapshot`

Note: Not dependent on JPEG encoder configured in camera.

10.0 System Requirements

10.1 Requirements

In order to test the camera system you need the following items:

Laptop or desktop computer

- 100/1000BASE-T network card installed in the computer
- Latest Chrome, Firefox, or Edge web browser
- 100/1000BASE-T network switch or hub
- Cat5e or Cat 6 cable

10.2 Recommended Computer Specifications

The following are recommended computer specifications to run and operate a camera system:

- CPU: Intel® i7-860S 2.53 GHz or better
- Operating system: Microsoft® Windows® 7 or later
- Memory: 4GB DDR3@1066MHz or better
- Hard Drive: 7200 rpm – minimum speed with sufficient free space
- Video card: NVIDIA® GeForce® 9800 GTX+ with 512 MB RAM or better, or high-end AMD® Radeon™ HD series
- Monitor: LCD monitor with 1920x1080 or better resolution

11.0 Optional Accessories

The following optional accessories are recommended by CostarHD and can be purchased with the camera system.

Mounts

- Wall: CostarHD p/n 8425-7
- Pole: CostarHD p/n 8503-0

PoE ++ Injectors

- CostarHD p/n 7412007-003

Field Connectors

- MS Mating Connector: CostarHD p/n 1310230-111.
- AMP Mating connector kit: CostarHD p/n 8498-1

Waterproof RJ45 Coupler

- Waterproof RJ45 Coupler: CostarHD p/n 7610203-002.

24 Vac Power Transformer

- AC Outdoor Power Supply: CostarHD p/n 7411543-010.

Wiper Arm

- Wiper Arm Assembly: CostarHD p/n 8190-5. See *"Wiper Unit" on page 47*.

Outdoor Surge Protective Device for PoE++

- Surge Protective Device, CostarHD p/n 7412009-001.

11.0 Service

The 4260HD and 4290HD Series are designed for long-term unattended use and contains no user-serviceable parts. In the event of product failure, the system should be removed from the site and returned to an authorized service center for repair.

Note: Contact CostarHD field service department at (858) 391-1800 option 2 for service assistance or go to http://www.costarhd.com/Contact/Return-Authorization-Request for obtaining a Return Authorization Number.

11.1 Maintenance

Non-Optical Surfaces

- Clean the exterior as needed.

Optical Surfaces

- **Visible Spectrum Camera Head 4260HD and 4290HD**

  Clean the front window on the camera head as needed. Use a soft nonabrasive cloth, such as terry cloth or microfiber cloth, and a foaming glass cleaner. If present, clean the wiper blade and inspect it. Replace the arm if necessary.

- **Thermal Camera Head 4290HD**

  Clean the thermal lens on the camera head as needed.

11.1.1 Cleaning Thermal Camera Lens

Caution: Do not use tools or sharp objects when cleaning the lens.

Removal of Hard Particles and Contaminants

- **In a clean room**: Use compressed nitrogen to blow off dust and other particles.
- **In field conditions**: Rinse the lens with running water or use a wet cloth in order to remove sand, salt and other contaminants (do not apply pressure). Wipe the lens using a soft tissue paper or lens tissue.

Cleaning with Solvent

Use the following solvents for cleaning:

- Acetone – to remove grease
- Ethanol – to remove fingerprints and other contaminants
- Alcohol – for final cleaning (before use)

Below are steps for cleaning the thermal lens:

1. Immerse the tissue paper in alcohol/ propanol/ acetone or ethanol (reagent grade).
2. Wipe the lens in "S" motion (so that each area of the lens will not be wiped more than once).
3. Repeat stage 2 until the lens is clean. Use a new tissue each time.

CostarHD also recommends the use of MiracalWipe® TX4004, TX4009 or TX4012 from Texwipe to clean the lens: *https://www.texwipe.com*.

Check pressure periodically. Occasional pressurization of the camera housing may be required. Pressure can be checked remotely via the Web Browser by configuring the OSD (On-Screen Display). (Setup Page > OSD > OSD Display Configuration. On the Line, select Maintenance.) See "Operation Manual" 6x-1115, OSD section.

11.2 Camera Head Housing Pressurization

Before shipping from the factory dry packs of desiccant are secured inside the camera housing. The housing is then sealed and purged with dry nitrogen to remove moist air from inside the housing. The purging process provides an internal relative humidity of 5% or less. The camera does not require any further purging or pressurizing maintenance after shipment. If any moisture ingress occurs after shipment, the camera head has a lifetime warranty against this.

Caution: Exceeding 20 psi can cause damage to the relief valve.

Important: Due to high temperature, high altitude, or other reasons, the pressure differential between the inside and outside of the camera head may increase. The pressure relief valve opens when pressure rises above 20 psi (138 kPa), allowing excess internal pressure to bleed off. After the camera system returns to normal conditions, the internal pressure must be checked and the camera housing must be pressurized with dry nitrogen to bring the pressure back to approximately 5 psi +/- 1 psi.

Note: Preferred gas for pressurization is dry nitrogen. Argon is an acceptable substitute. Do not use compressed air, as it may contain oil, moisture, or other contaminants.

11.3 Wiper Unit

The camera system is available with a wiper arm option to keep the visible spectrum camera head window clear in inclement weather. The wiper design allows for easy replacement of the wiper arm.

Wiper Arm Replacement

To replace a worn or deteriorated wiper arm, use the following parts:

- Wiper Arm Assembly: CostarHD p/n 8190-5
- Set Screw: Part of the wiper arm assembly
- Hex wrench tool: 1.5 mm

Below are steps for replacing the wiper arm:

1. Switch off the power.
2. Loosen the set screw on the old arm. Remove the old arm.
3. Loosen the set screw on the new arm. Install the arm.
4. Tighten the set screw on the new arm.

   Caution: Do not scratch the glass.

5. Check to ensure that the wiper arm works properly. When the power is on, the wiper blade must go all the way across the window face.

11.4 Troubleshooting

The table below identifies possible issues that could occur with the camera, and corrective actions on how to resolve them.

Note: If the issue persists after following the corrective actions, contact CostarHD field service department at (858) 391-1800 option 2 for additional assistance.

Problem/Symptom	Possible Cause	Correction
Camera doesn't Power up	No camera power available	Insure power is on
	Camera is not connected	Insure cable is connected to power source
	Power Cable length is to long	Verify the power cable distance does not exceed the maximum distance allowed.
	Cable is wired wrong	Insure wiring is per installation manual
Cannot Ping	The product is located on a different subnet	Contact your Network Administrator for valid IP address for your network
	Ethernet cable length	Verify the Ethernet cable distance does not exceed 100m.
	No valid communication path to camera over network cloud	If you can ping directly at camera site, contact your Network Administrator for assistance
No link lights on switch	No camera power available	Insure power is on
	Ethernet cable length	Verify the Ethernet cable distance does not exceed 100m
	Camera is not connected	Insure cable is connected to power source
	Cable is wired wrong	Insure wiring is per installation manual
Don't know cameras IP Address	Address was changed	Use CostarHD RISE discovery tool available at http://www.costarhd.com/Support/Product-Software
	New Camera Installation	RISE Default IP's are 192.168.2.150, or use RISE discovery tool above to identify IP address
No Video	Web browser version	Verify your browser is latest version of Chrome, Firefox, or Edge
	Firewall Setting	Disable your firewall, or open ports 30,000 up to 31,000
Presets are off original position	Mechanical shock uncalibrated pan/tilt system	Recalibrate camera system
	Presets have been overwritten	Reprogram presets and enforce user access levels to prevent unwanted reprogramming
Cannot Log in	Access credentials have been changed	Contact your Camera Administrator for current login credentials
	Time/Date setting incorrect	The date and time settings in should be synchronized with an NTP server.
	Forgot Admin account credentials	Contact CostarHD Field Support for assistance in resetting the Admin credentials
Poor Video Quality	Video macroblocks - Insufficient bandwidth	Lower stream data rate, image resolution and/or frame rate until acceptable quality is achieved
	Moving object smearing - Lost video packets	Lower stream data rate, image resolution and/or frame rate until acceptable quality is achieved
	Streaming interruptions - no buffering on cellular modem	Use constrained mode, Lower stream data rate, image resolution and/or frame rate until acceptable quality is achieved
	Brightlight blooming- Car Headlights	Use intensity reduction mode, lower gain or turn use WDR mode
No camera PTZ control	Camera PTZ settings not configured properly	Verify camera is setup for the PTZ protocol being used. Refer to user manual for proper port configurations, protocol, wiring, baud rates etc.
	Firewall Setting	Verify the port used for PTZ protocol is open on firewall
	Internal PTZ service is not functioning	Reset camera system from browser

12.0 Warranty

Please refer to the CostarHD website for product warranty information:

http://www.costarhd.com/Support/Warranty.

For more information please visit us at:

www.CostarHD.com