



3490HD Series

Installation Manual

9993000A



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(858) 391-1800

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1.0 General Information

Congratulations on your purchase of a CohuHD Rugged Outdoor 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 3490HD Series. Please read this manual carefully prior to installation to prevent any accidental damage or misuse. The manual is available from the CohuHD website at <http://www.cohuhd.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 CohuHD website at <http://www.cohuhd.com/Support/Product-Documentation>.

1.3 Copyright/Intellectual Property Rights Statement

Copyright © 2015, 2016, 2017, 2018, 2019 CohuHD Costar, LLC. CohuHD Costar, LLC has intellectual property rights to technology embodied in the product described in this manual. CohuHD Costar™ and OCTIMA™ are trademarks of CohuHD Costar, LLC.

1.4 FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B 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 CohuHD 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: 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.

- 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 Vac 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 17](#) Surge Protection Devices for additional information on grounding and surge protection concepts.

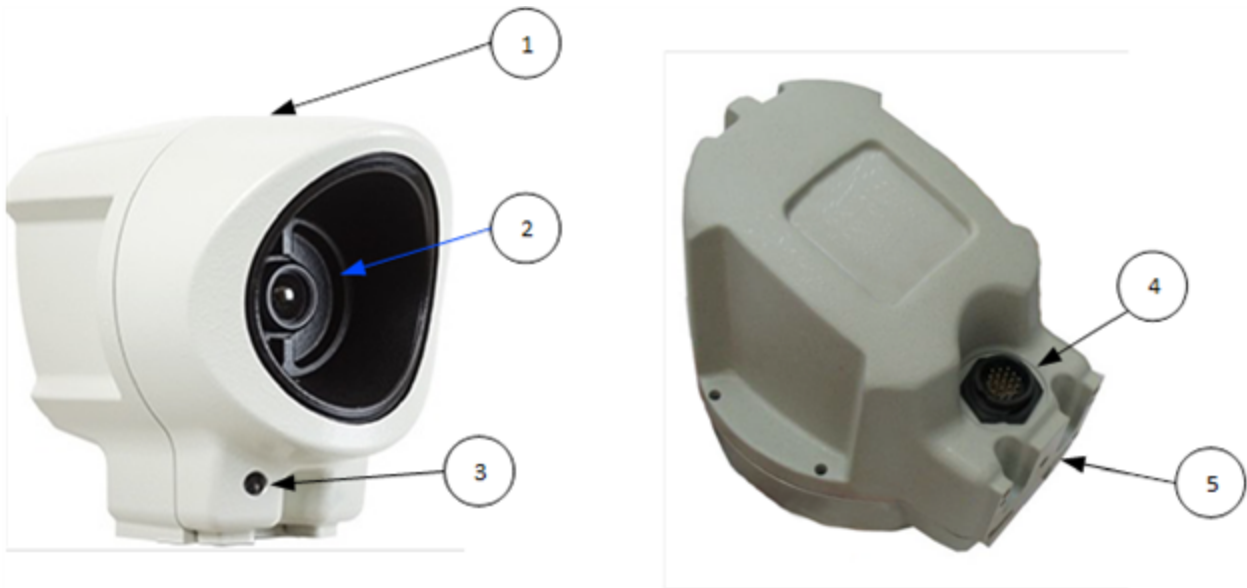
4.0 Package Contents

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

1. CoHuHD 3490HD Camera System
2. Mating Connector (p/n = 1310661-001)
3. Quick Start Instruction Sheet

Note: If you are missing any items, please refer to section ["Support Services" on page 5](#) for assistance.

5.0 Product Overview



1. 3490HD Enclosure
2. Thermal Camera
3. Visible Camera
4. 18 Pin Camera Connector
5. Mounting Base

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

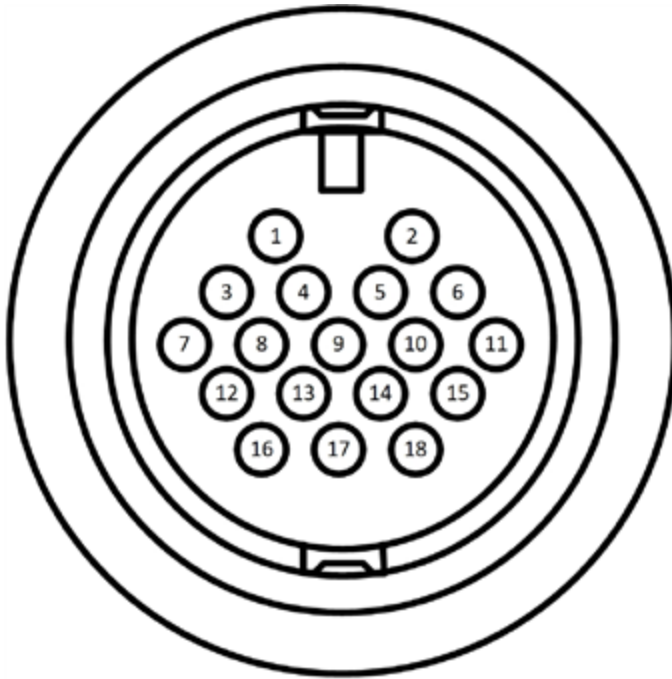
6.2 Factory Default User Names and Passwords

The camera is shipped with the usernames and passwords shown in the table.

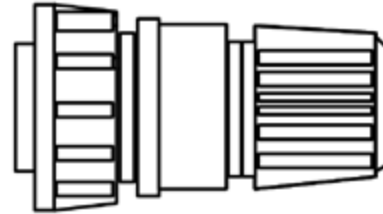
Access Level	Username	Password
Administrator	admin	admin

7.0 Connections

7.1 Camera Connections



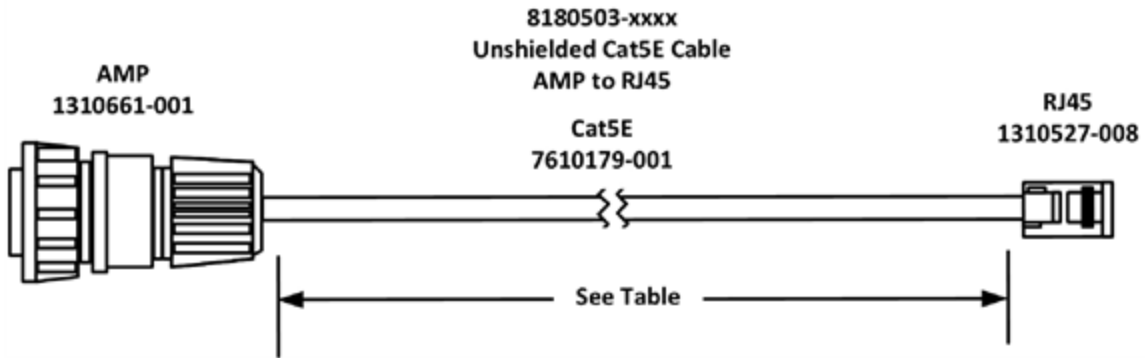
3490HD Camera Connector
Facing Connector, Male Pins



1310661-001
AMP 18 Pin
Mating Connector

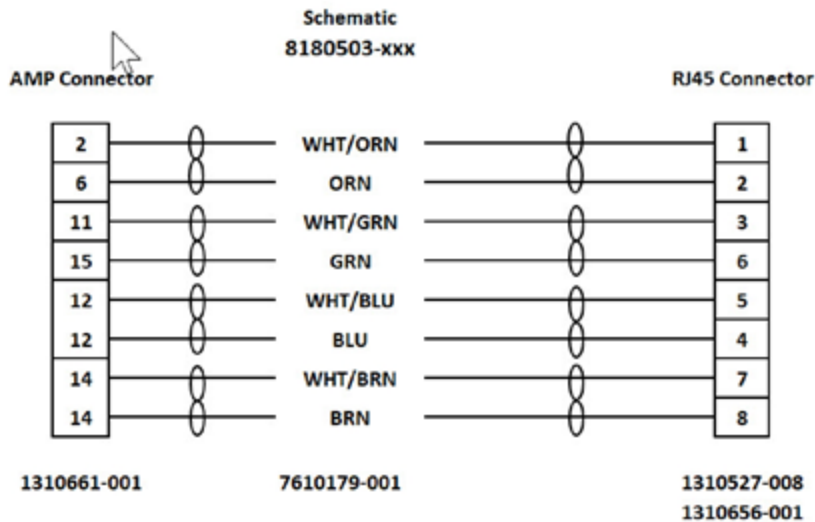
AMP Connector Pinout	
Pin	Function
2	Ethernet TX+
6	Ethernet TX-
11	Ethernet RX+
12	PoE(+)
14	PoE(-)
15	Ethernet RX-

7.2 Manufactured Cable



8180503 Cables - AMP to RJ45		
CohuHD p/n	Cable Length	
	Feet	Meters
8180503-001	3	1
8180503-005	5	2
8180503-010	10	3
8180503-025	25	8
8180503-055	55	17
8180503-100	100	30
8180503-150	150	46
8180503-200	200	61
8180503-250	250	76
8180503-300	300	91
8180503-328	328	100

7.3 Schematic



7.4 Waterproof Coupler Assembly

7.4.1 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 (2 pcs)
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 CohuHD Customer Service Department for technical assistance at (858) 391-1800 option 2.

Note: Installation Manuals are available at CohuHD website at: <http://www.cohuhd.com/Support/Product-Documentation>

7.4.2 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 and Coupler Body ③.



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 ⑥.



5. Insert the Washer ④ 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. Attached the Sealing Collar ⑥ to the Coupler Body ③. Make sure it is tightened completely.



8. Select the desired Seal ② (typically small diameter cable), 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 all the way into the Sealing Collar.



The Seal 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 CohuHD 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 PowerSPDs
- EthernetSPDs
- Power over Ethernet (PoE) SPDs
- AnalogVideoSPDs
- LowVoltageDC(SerialData)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.

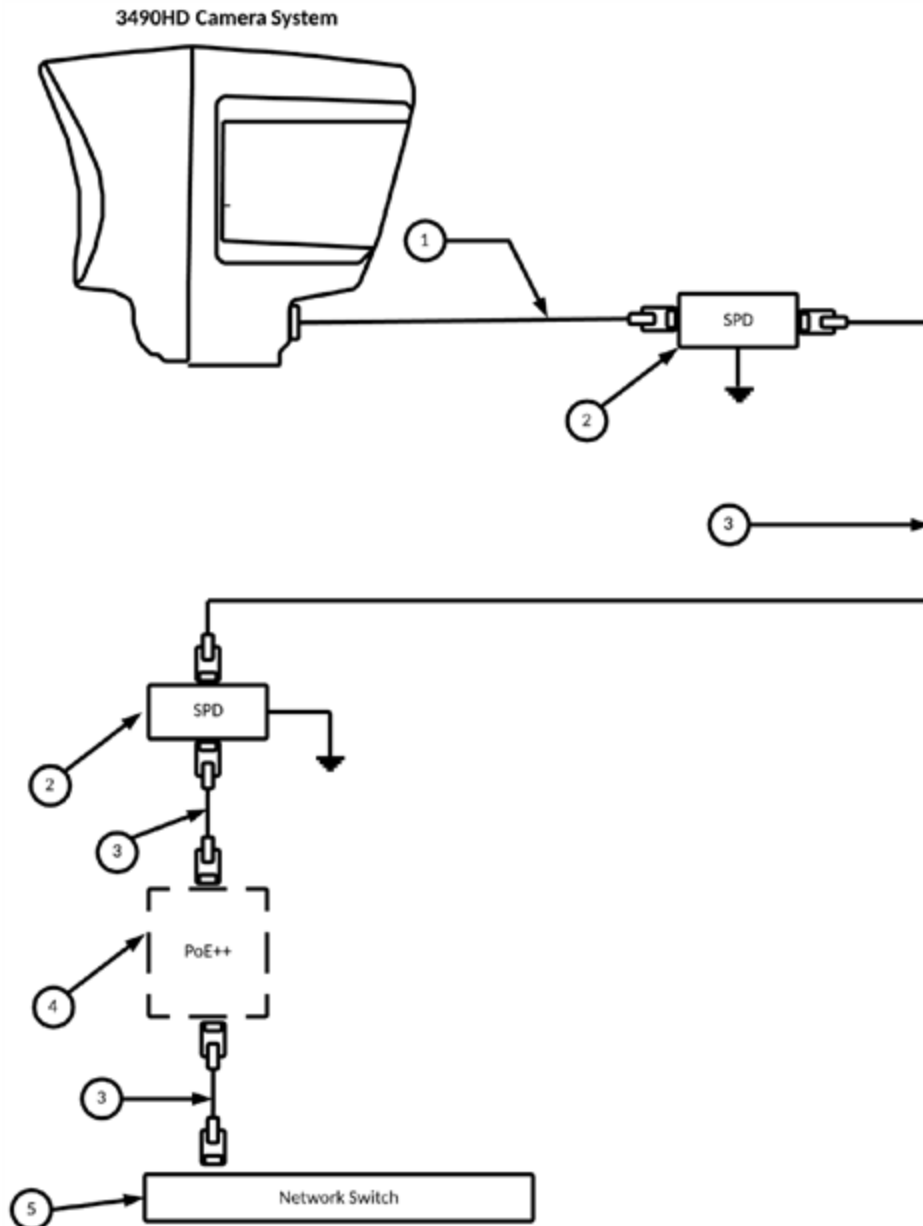
Proper orientation is key on many SPDs as they often have PROTECTED and UNPROTECTED terminals, or DEVICE and LINE terminals. For a typical CCTV application, the UNPROTECTED or LINE terminals should be used to connect the upper and lower SPDs, while the PROTECTED or DEVICE terminals should connect to 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

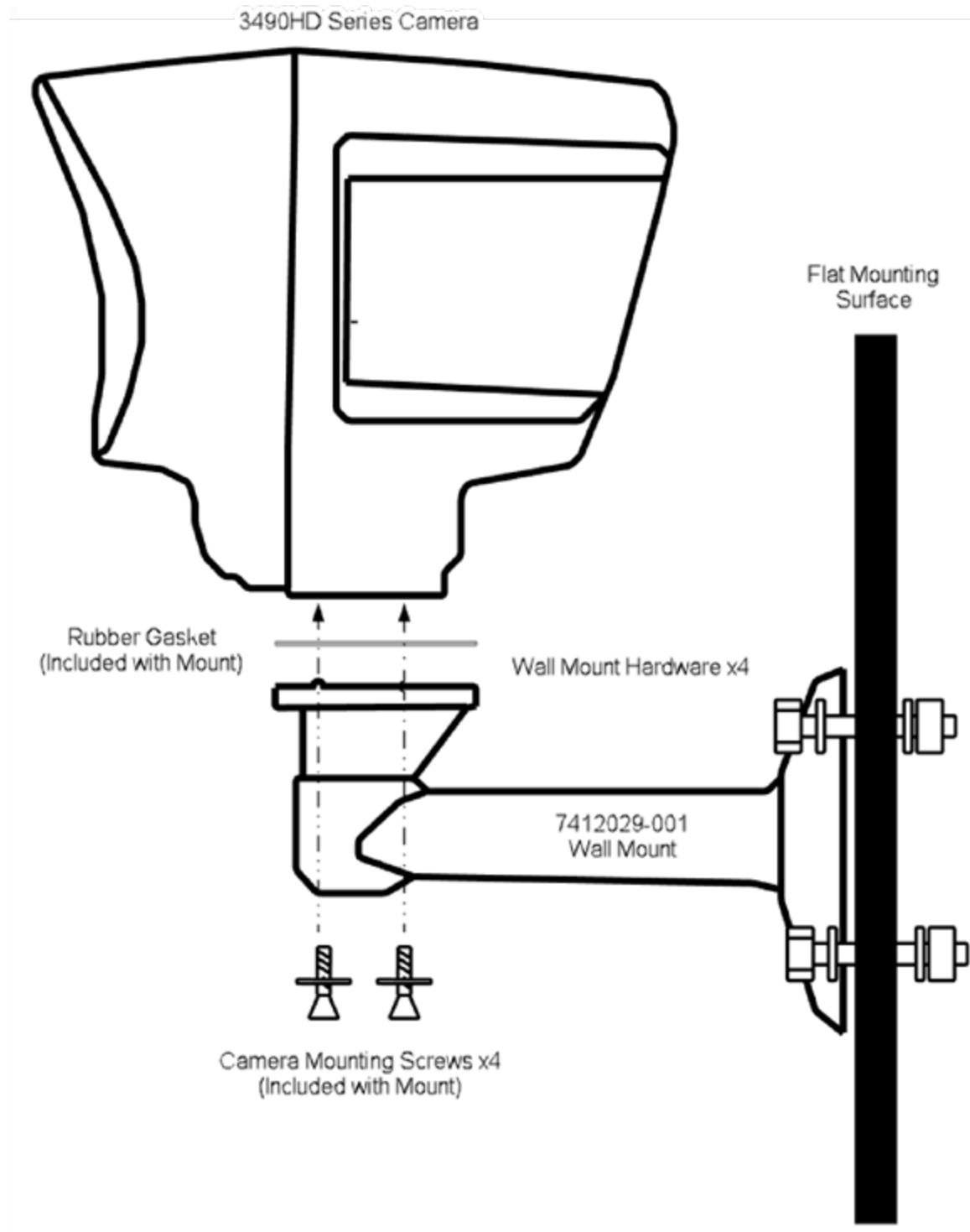
Warning: Always support a camera until it has been fastened securely.

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

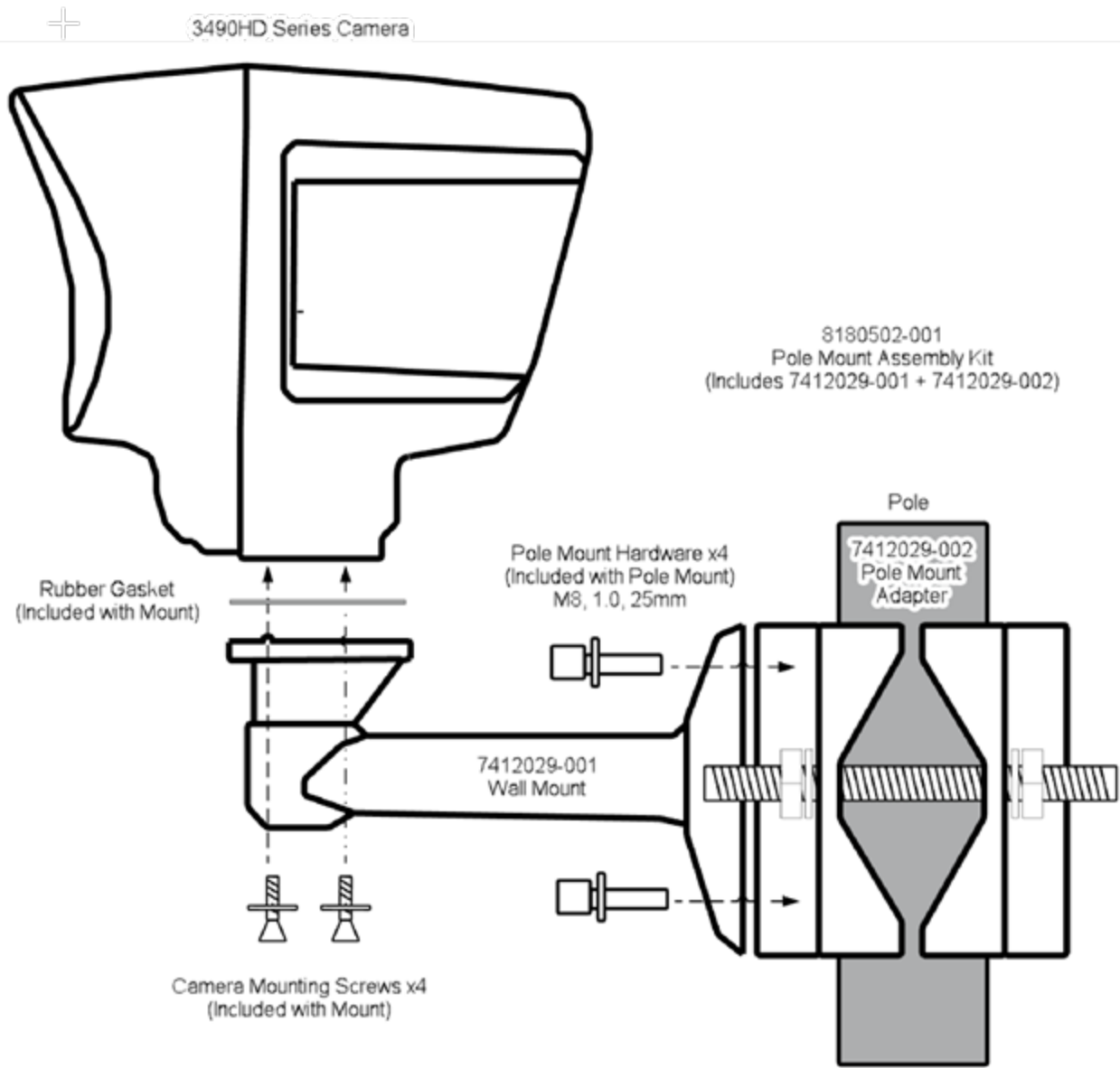


1. Camera Cable
2. Surge Protection Device (SPD) (Recommended). Must be located within 3-10 feet of the device to be protected and properly earth grounded. (Refer to CohuHD p/n 7412009-001)
3. Cat5E or better cable.
4. PoE++ Power Supply (Optional)
Required if the Network Switch/Media Device does not provide PoE+ power. (Refer to CohuHD PoE p/n 7412007-003)
5. Network Switch/Media Access Device – Supplied by Others

9.1 Typical Wall Mount Installation



9.2 Typical Pole Mount Installation



10.0 Camera URLs

10.1 Camera Default Passwords

- User = admin
- Password = admin

10.2 Network Video Ports Required for RTSP

- 8554: RTSP uses TCP or UDP as its transport protocol
- UDP Ports: Self-Determined

10.3 Video Stream Connection URL's

- URL Structure = `rtsp://<ipaddr>:8554/rtsp/<Stream#>`
- ipaddr = Current IP address of the camera
- Stream# = 1, 2, 3 or 4

Example URL's for Viewing Video

- Thermal Camera, Primary Stream = `rtsp://192.168.2.150:8554/rtsp/1`
- Visible Camera, Primary Stream = `rtsp://192.168.2.150:8554/rtsp/2`
- Thermal Camera, Secondary Stream = `rtsp://192.168.2.150:8554/rtsp/3`
- Visible Camera, Secondary Stream = `rtsp://192.168.2.150:8554/rtsp/4`

11.0 System Requirements

11.1 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
- Microsoft Internet Explorer, version 11 or later web browser
- 100/1000BASE-T network switch or hub
- Cat5e or Cat 6 cable

11.2 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: 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 ATI Radeon™ HD series
- Monitor: LCD monitor with 1920x1080 or better resolution

12.0 Optional Accessories

The following optional accessories are recommended by CoHuHD and can be purchased with the camera system as separate items.

Mounts

- Wall Mount Assembly p/n 7412029-001
- Pole Mount Adapter p/n 7412029-002
- Pole Mount Assembly p/n 8180502-001 (Includes 7412029-001 and 7412029-002)

PoE ++ Injectors (Spare/Replacement)

- PoE++ Injector p/n 7412007-003

Waterproof RJ45 Coupler (Spare/Replacement)

- IP67 Coupler p/n 7610203-002

Outdoor Surge Protective Device for PoE++

- IP67 Surge Protection Device p/n 7412009-001

13.0 Service

The 3490HD Series is 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 CohuHD field service department at (858) 391-1800 option 2 for service assistance, or go to <http://www.cohuhd.com/Contact/Return-Authorization-Request> for obtaining a Return Authorization Number.

13.1 Maintenance

The 3490HD series maintenance requirements are minimal, requiring only occasional exterior cleaning as described below:

Non-Optical Surfaces

Clean the exterior enclosure as deemed necessary (likely for aesthetic, not operational purposes). Use a soft cloth and commercially available foaming cleaner for metal/painted surfaces.

Optical Surfaces

Clean the camera system window as needed. Use a soft non-abrasive cloth, such as terry cloth or microfiber cloth, and a foaming glass cleaner.

Thermal Lens Surfaces

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.

13.2 Troubleshooting

The table below identifies possible issues that could occur with the camera, and corrective actions on how to resolve them. If the issue persists after following the corrective actions, contact CohuHD 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	Ensure 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
	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 CohuHD ONVIF discovery tool available at http://www.cohuhd.com/Support/Software-Downloads
	New Camera Installation	Default IP is 192.168.2.150, or use ONVIF discovery tool above to identify IP address
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 CohuHD 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

14.0 Warranty

Please refer to the CohuHD website for product warranty information:

<http://www.cohuhd.com/Support/Warranty>.

For more information please visit us at:

www.CohuHD.com