



**Extreme CCTV™**  
SURVEILLANCE SYSTEMS

Precision Engineered Opto-Electronics™

# INSTALLATION INSTRUCTIONS

## EX15 SUBMERSABLE HOUSING



[www.ExtremeCCTV.com](http://www.ExtremeCCTV.com)

Toll free: 1-888-409-2288  
MAN-15-04



## IMPORTANT

For best results, please read this Instruction Booklet prior to installing the **EX15** camera.

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## WARNING!

CSA Certified / UL Listed CLASS 2 power adaptors must be used in order to comply with electrical safety standards.

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EU Directives covered by this declaration:

72/9/EC Low Voltage Directives

89/336/EEC Electromagnetic Compatibility Directive

Only qualified personnel shall install any  
**Extreme CCTV®** surveillance product.

**Extreme CCTV®** will not be responsible for injuries or damages resulting from the improper installation or use of any product sold by **Extreme CCTV®**, their agents, distributors or dealers.

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## **DESCRIPTION**

The EX15 utilizes a polyvinyl chloride (PVC) Thermoplastic to achieve resistance to corrosion and chemical attack by acids, alkalies, salt solutions and many other chemicals. PVC has been used for over 30 years in chemical processing and industrial plating. The EX15 is the first application of PVC for CCTV surveillance use and has been tested to NEMA 6P.

O-Rings on each end ensures a submersible watertight seal. A precision ball-bearing slide fully extends the camera chassis out for easy installation and access to the CCTV electronics.

## **UNPACKING**

Care should be taken when unpacking the shipped unit. Check the parts list and confirm all items have been located. Inspect the equipment thoroughly to ensure nothing was damaged in transit.

Contact Extreme CCTV if a problem is noted.

- [quality@ExtremeCCTV.com](mailto:quality@ExtremeCCTV.com)
- Tel: 1-604-420-7711 or

see the rear of the booklet for contact numbers.

## **PARTS LIST (items supplied with unit)**

- EX15 housing assembly
- Installation Instructions booklet

## **ITEMS REQUIRED FOR INSTALLATION**

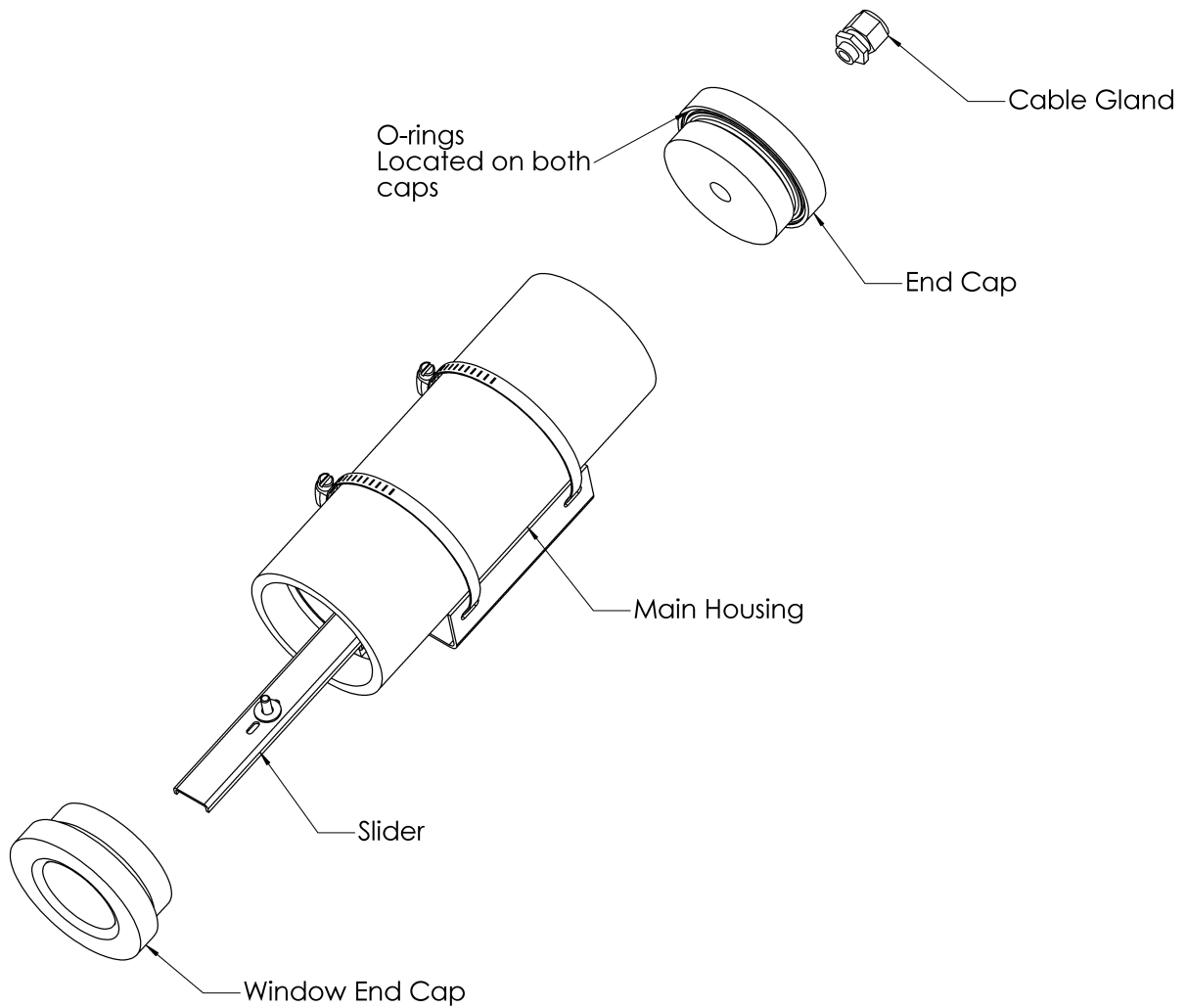
(not supplied with unit)

- Camera
- Small Slotted screwdriver
- Mounting Screws
- Crescent Wrench

## **INITIAL PREPARATIONS**

- Determine the optimum location for the camera.
- Check the Manufacturer's Manual, the power requirements and cabling required for the selected Camera.

# 1. Removing the End Caps



Step 1.1 - Remove the Cable Gland.

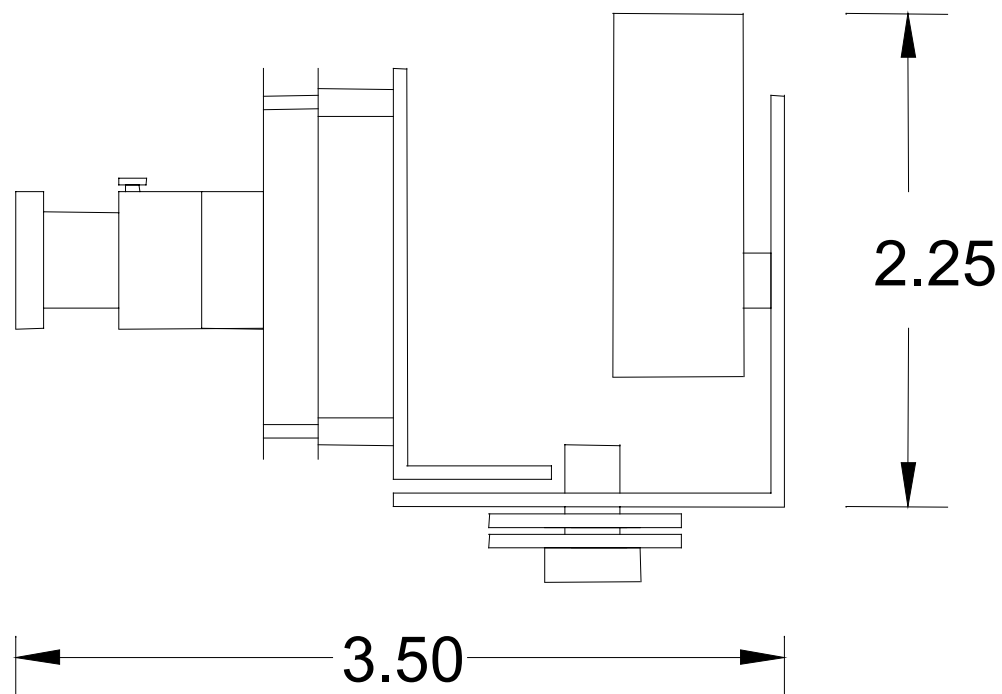
Step 1.2 - Remove End Cap

- Step 1.3 - Slide the required power cable for the selected camera through the cable gland and end cap. Leave enough slack on the cable so it may reach the camera with the slider fully extended.
- Step 1.4 - Tighten the cable gland onto the end cap.
- Step 1.5 - Tighten the cable gland onto the power cable.
- Step 1.6 - Firmly tighten the end cap onto the housing, making sure that the O-ring is compressed fully.

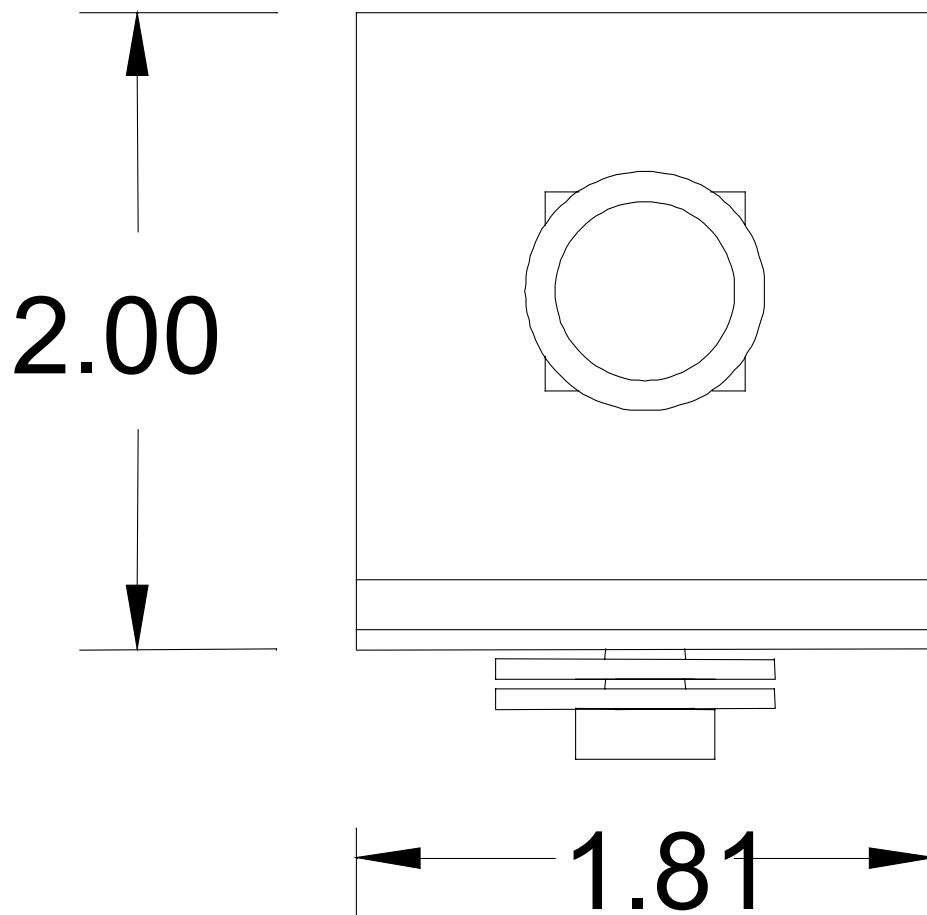
## 2. MOUNTING - CAMERA

### 2.1 MECHANICAL SPECIFICATIONS

( See *Section 7 - General Specifications*, for additional information)



**FIGURE 2 – 1**  
**Side View**

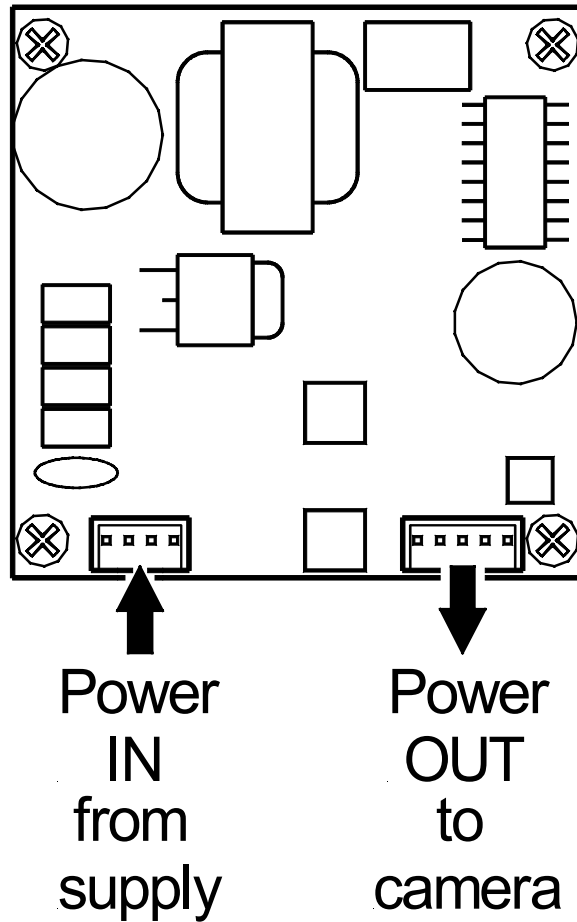


**FIGURE 2 – 2**  
**Front View**

## **2.2 INPUT POWER CONNECTIONS**

The camera unit is pre-connected with an electrically isolated power board for 24V ac or 12V dc operation with no wiring change or wiring polarity. See diagram below for wiring details.

**Note: Input voltage is 10.5VDC to 40VDC for DC input. The AC input range is 12VAC to 28VAC.**



**FIGURE 2 – 3**  
**12VDC or 24VAC**  
***Electrically Isolated Power Board***

## 2.3 CAMERA MOUNTING

Select a suitable location that is protected from accidental damage, tampering, and environmental conditions exceeding the camera's specifications.

*Caution: The selected mounting location should not place the camera in a situation where its environmental specifications could be exceeded. See section 3. Ensure the selected location is protected from falling objects, accidental contact with moving objects, and unintentional interference from personnel. Follow all applicable building codes.*

☞ The following installation guidelines must be followed:

- Locate the camera such that it cannot be easily interfered with, either intentionally or accidentally.
- Select a mounting surface capable of supporting the combined weight of the camera and mounting hardware under all expected conditions of vibration and temperature.
- Secure all cabling.

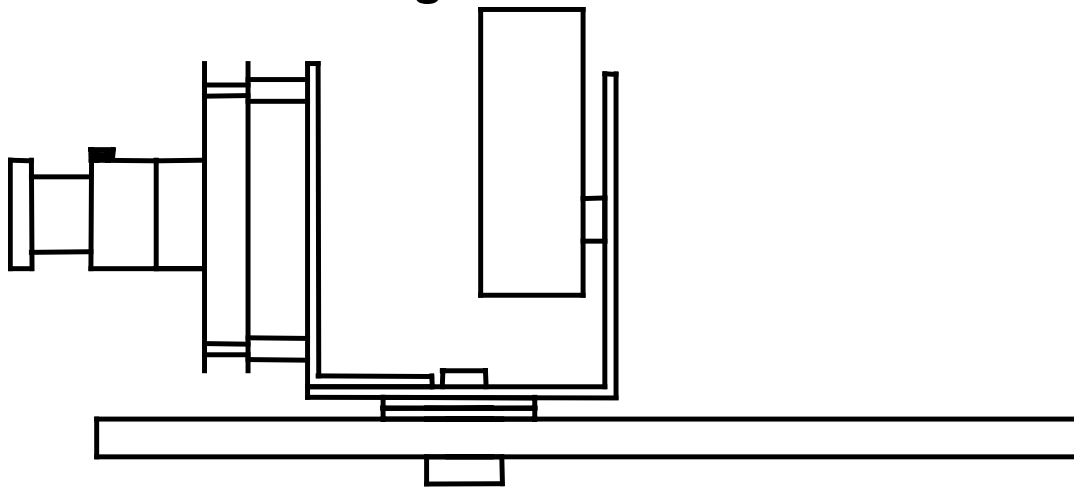
- Installations on drywall must use a ¼” bolt and drywall butterfly type anchor or superior connection.

The EX15 can be mounted to an existing housing or bracket with a ¼” –20 mount.

Step 2.3.1 - Remove the ¼”-20 bolt and the plastic spacer from the bottom of the mount.

Step 2.3.2 - Mount the EX15 unit to a housing or bracket with the ¼”-20 bolt. The spacers may or may not be required depending on the height required.

See **Figure 2-3-1**.



**FIGURE 2 - 3 - 1**  
**Mounting Details**

## **2.4 OPTIONAL ADJUSTMENTS**

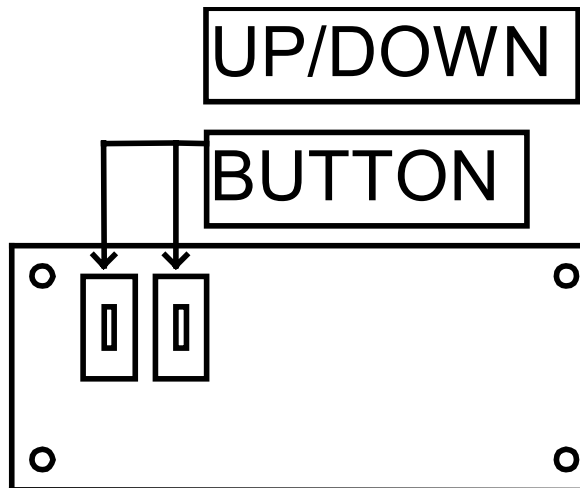
The EX15 has different optional versions. It is available in line lock, auto-iris CS mount or Q-version (day/night).

### **Line Lock**

The EX15 camera is available in 24VAC line lock.

It is used to synchronize multiple camera systems.

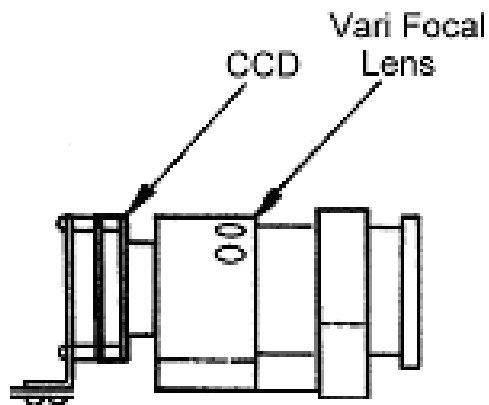
Step 2.4.1 - Press and hold the UP or DOWN button to increase or decrease the phase. The phase will automatically change when the button is pressed. Release it once the correct phase is obtained. The phase will hold in permanent memory even if power is removed. Refer to figure 2-4-1 for button locations.



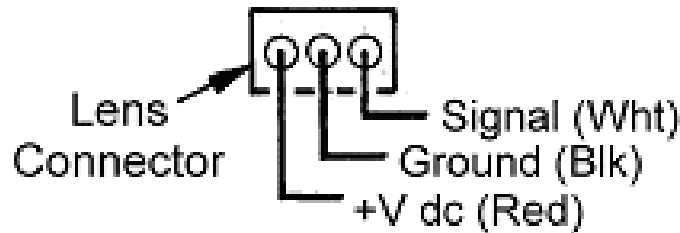
***Figure 2 - 4 - 1***  
***Line Lock***

## **CS Mount**

The EX15 is available in CS mount for auto-iris video drive lens.

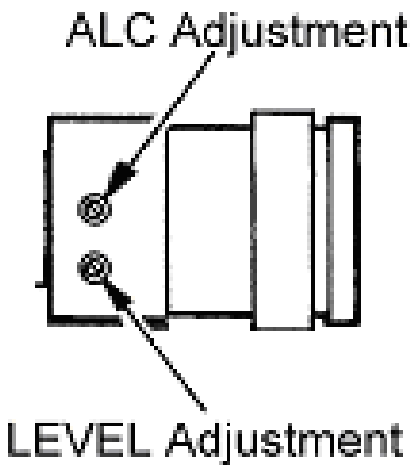


***Figure 2 - 4 - 2***  
***Lens Connection***



***Figure 2 - 4 - 3  
Auto-Iris Connection.***

- Step 2.4.2- Screw on the vari-focal lens (may be supplied by the customer). Be careful to not damage the mount and circuit board.
- Step 2.4.3 - Connect the lens auto-iris cable to the lens connections on the terminal block. Red is power, black is ground and the white is the video signal. See figure 2-4-3.
- Step 2.4.4 - The video level can be adjusted for proper image by using the adjustments on the lens. Refer to figure 2-4-4 for adjustments. Note: The lens type must be video drive.

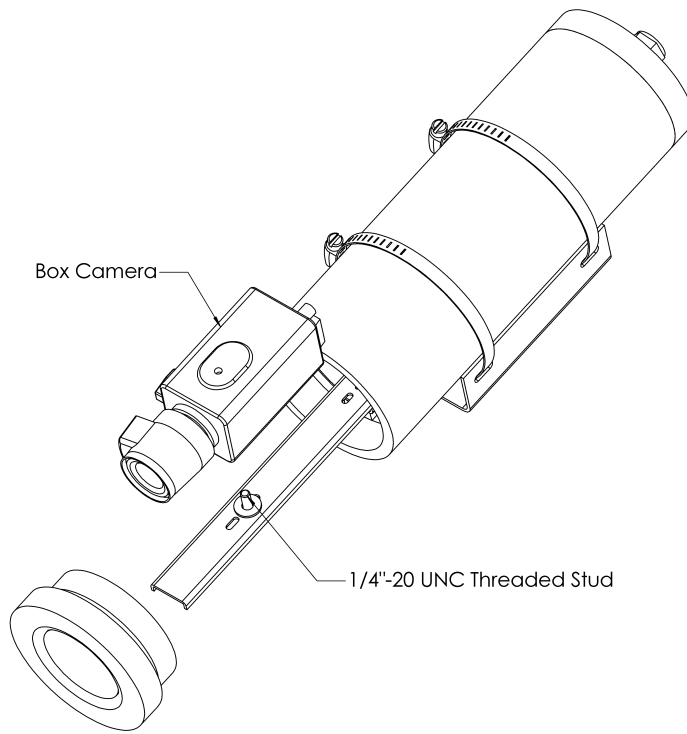


**Figure 2 - 4 - 4**  
**Auto-iris Adjustment**

<b>ALC Mode Select</b>	<b>ALC Adjustment</b>
Metering to the "peak" light intensity of the image	Turn towards "P"
"Average" metering over the image	Turn towards "A"

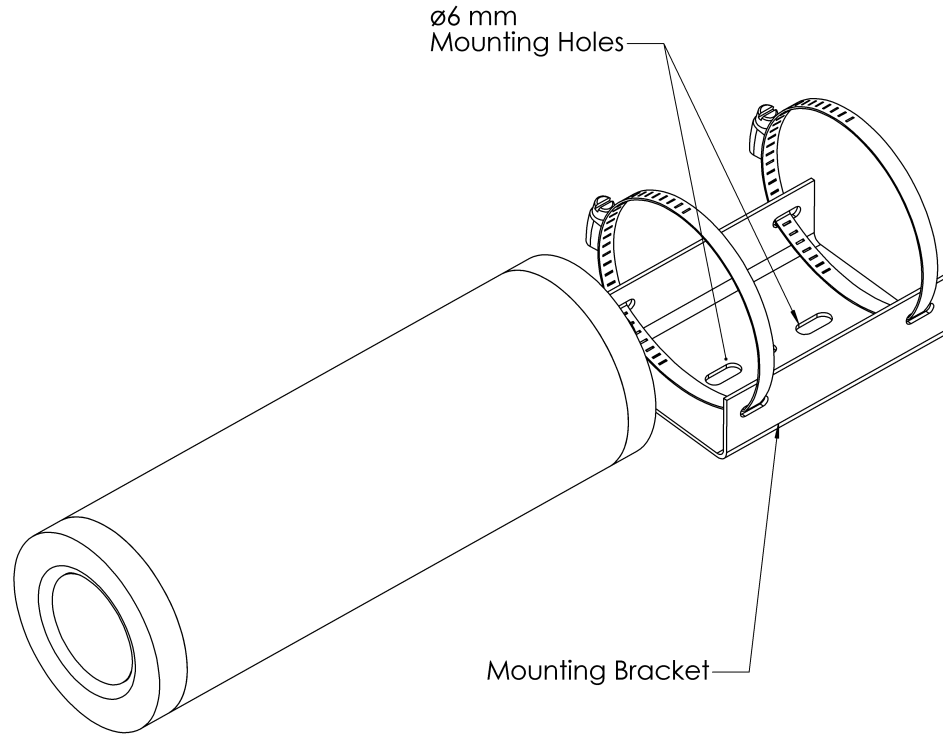
<b>Brightness</b>	<b>LEVEL Adjustment</b>
For a brighter picture	Turn towards "H"
For a darker picture	Turn towards "L"

## 2.5 CAMERA MOUNTING



- Step 2.0 - Thread housing onto the Ex15 Slider.
- Step 2. 1- Connect all cables required for the selected camera and slide the unit back into the Ex15.
- Step 2.3 - Firmly tighten the end cap onto the housing, making sure that the O-ring is compressed fully.

### 3. MOUNTING - HOUSING



Select a suitable location that is protected from accidental damage, tampering, and environmental conditions exceeding the camera's specifications.

*Caution: The selected mounting location should not place the camera in a situation where its environmental specifications could be exceeded.*

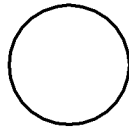
*Caution: Ensure the selected location is protected from falling objects, accidental contact with moving objects, and unintentional interference from personnel.*

Step 3.1 - Loosen the Clamps for the mounting bracket using the slotted screwdriver.

Step 3.2 - Fasten the mounting bracket onto the selected location. See Page 8 for Mounting Pattern.

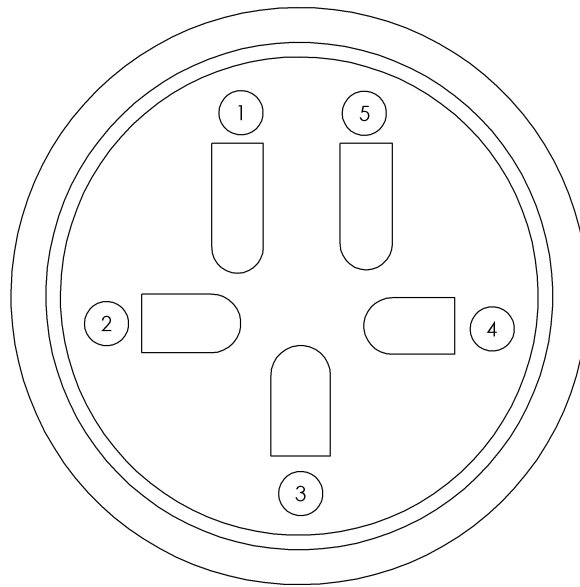
Step 3.3 - Slide the Ex15 back into the clamps and tighten.

## 4. TEMPLATE – MOUNTING HOLES



## 5. OPTIONAL SUBMERSIBLE WIRING

Note: Recommending cable for submersible application is Belden P/N 1164B



### Pigtail Connector Wiring

<i>Connector #</i>	<i>Wire Colour</i>	<i>Function</i>
1	Wht	Video
2	Red	+ Power
3	Grn	N/C
4	Org	V <sub>gnd</sub>
5	Blk	- Power

## 6. TROUBLESHOOTING GUIDE

<i>PROBLEM</i>	<i>POSSIBLE CAUSE</i>	<i>LIKELY SOLUTION</i>
<b>No Video</b>	<p>1. <u>Power Supply:</u> - Connections....</p> <p>-Voltage Range...</p>	<p>Check input power connections at the cable leads. Check for loose wires.</p> <p>If connected to DC, check voltage input range of 10.5 – 40 V.</p> <p>If connected to AC, check input voltage range of 12 – 28V.</p> <p>Measure the voltage at the input terminal block.</p>

<p><b>No Video (cont'd.)</b></p>	<p><b>2. <u>Video Connections</u></b></p>	<p>Determine if wiring polarity at “Video Connector” terminal block is correct. Check BNC connector.</p> <p>If still no video, connect the camera directly to the monitor. Check the video signal. If okay, the problem is with the interconnections. If still no video, contact Extreme CCTV® (see back cover for contact details).</p> <hr/>
<p><b>Poor Picture Quality</b></p> <p>Snowy Image</p>	<p>Poor Video Signal</p>	<p>Ensure video cable is correctly matched and terminated with 75 ohms at each end. Make sure video cables are similar types.</p>

<p><b>Poor Picture Quality</b></p> <p>Dim Image</p> <p>Snowy Image (cont'd.)</p> <p>Horizontal Scan Lines, Rolling Up or Down</p> <p>Negative, scrambled, or faded image</p>	<p>Iris closed</p> <p>Noisy Power Supply</p> <p>Ground Looping on video cable</p> <p>24V ac operation</p> <p>Low voltage</p>	<p>Increase iris level on lens</p> <p>Check connections. Relocate or replace power supply.</p> <p>Check the coax cable shield is not touching ground, e.g. at couplings. An electrically isolated circuit board or isolation transformer may be required.</p> <p>Line Lock adjustment required.</p> <p>Check voltage at input power cable. Must be &gt;10.5V dc or &gt;12V ac.</p>
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**NOTES:**

## 7. GENERAL SPECIFICATIONS

Housing Material....	PVC – Type 1, Grade 1, 4” Schedule 80
Housing Thickness.....	8.6 mm (0.34”)
Window Material.....	Acrylic
Base Bracket Material.....	316 Stainless Steel
Nominal Weight (w/o camera/lens) ....	6.8 lbs (3.1 kg)
Overall Length .....	345 mm (13.6”)
Overall Height (w/ SS U-Bracket) .....	126 mm (5.0”)
Cable Entries .....	One (1) via ½” NPT at rear
Camera Access .....	Ball-Bearing Slide
Max. Camera/Lens Length .....	180 mm (7.1”)
Max. Camera/Lens Ht/Width .....	100 mm x 100 mm 4.0” x 4.0”
Temperature Range .....	-50°C to 60°C -58°F to 140°F

*Subject To Change Without Notice.*



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