

SY EYE HD-SDI & SY EYE IP HD Installation Guide

Installation of a camera module to the weld-in flange

Please read the following pages before attempting installation

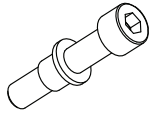


Before you start...

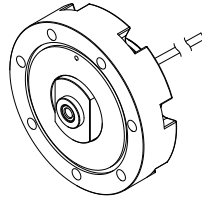
This document describes the recommended method for installing the camera module of Lumishore SY EYE series cameras in order to provide a water tight seal between the flange (previously welded in) and the camera.

- DO NOT use any adhesives, sealants, gaskets, cleaning agents or chemicals other than those specified in this manual. Using any materials in the installation that are not specified in this manual will invalidate the warranty.
- The camera module is a factory sealed unit. DO NOT attempt to take the camera apart or remove any bolts.
- The flange and the camera must be electrically isolated - ensure the check described in the manual is carried out.
- The flange / camera installation must be pressure checked to ensure it has been installed correctly. Ensure this check is carried out as specified.

Parts Supplied :



Camera Securing Bolt
with Washer and
Insulating Washer
(x7)



SY EYE Camera Module
(HD-SDI or IP HD)

Camera Module Installation :

- 1) Check that the lens has been fitted and tested following the procedure 45-0075. Remove the flange cover plate.
- 2) Locate the camera module so that the Top Dead Center (TDC) is closest to the TDC of the flange.
- 3) If the TDC of the camera does not line up with the flange, undo the 2 screws (half a turn ONLY – this will be enough to rotate the camera) at the front of the camera, as shown below (fig 1).
- 4) Gently rotate the camera to the correct position (fig 2). Hold in position and tighten the screws to secure the camera. Switch the camera on and check that the picture is the correct orientation on the screen before final installation.

Fig 1.

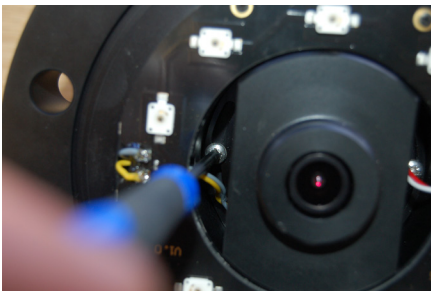
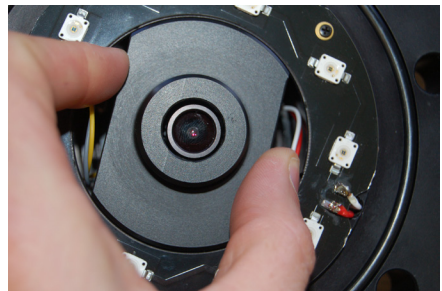
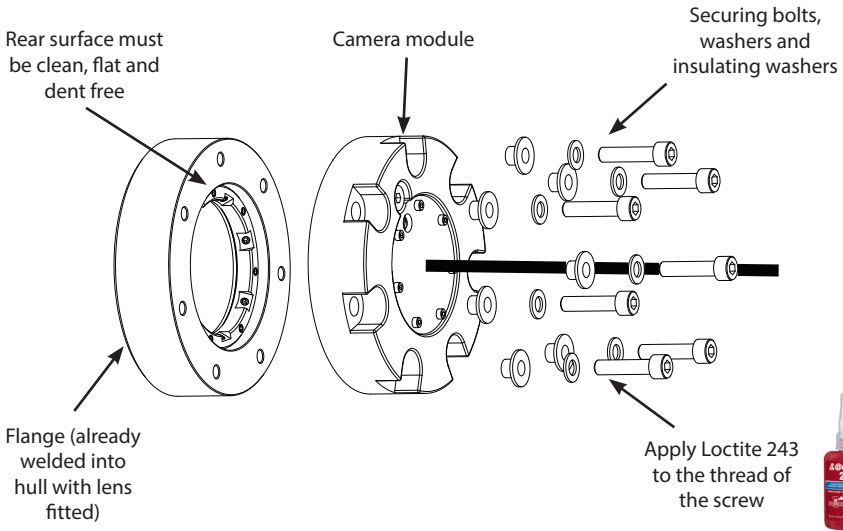


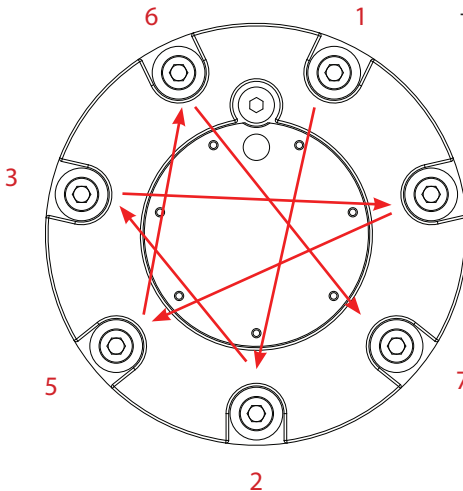
Fig 2.



- 5) Check the o-ring is in place on the camera module. Place the camera module over the flange and align the holes.



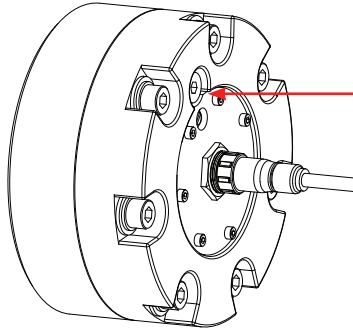
- 6) Apply a small amount of Loctite 243 to the thread of each bolt before fitting. Fit the light module to the flange, and secure in place using the bolts - **MAKE SURE** that the bolts have the washer and nylon insulating washers fitted.
- 7) Tighten the bolts in a circular pattern (as shown in the diagram). Tighten the bolts half a turn at a time, then move on to the next bolt. **USING A TORQUE WRENCH** tighten the bolts to a torque of 15 Nm.



Tighten each bolt half a turn at a time until **ALL** bolts are fully torqued

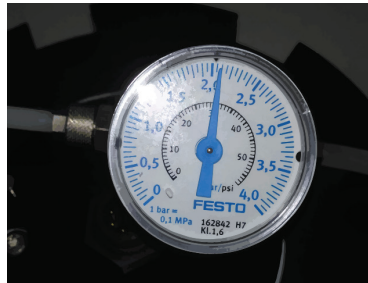
Pressure Test :

- 1) Remove the sealing bolt from the backplate - KEEP THIS SAFE AS IT WILL BE RE-FITTED LATER.
- 2) Fit the test valve to the backplate, and tighten down to provide a good seal.



Remove the outer bolt and sealing washer. KEEP SAFE as it will be re-fitted after the pressure test

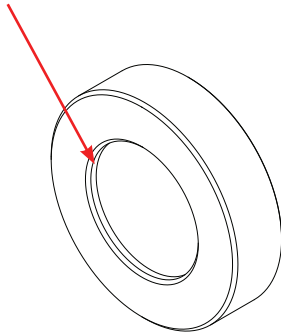
- 3) Fit the tube from the pressure test pump to the test valve. Using the test pump provided, pressurize the flange until it reaches a pressure of 30 PSI.



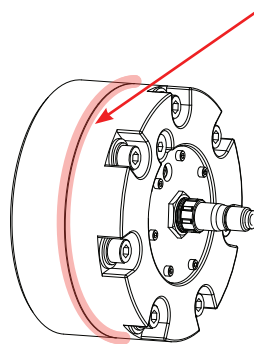
- 4) Close the valve, and monitor the pressure for 30 seconds. Check that there is NO DROP IN PRESSURE.



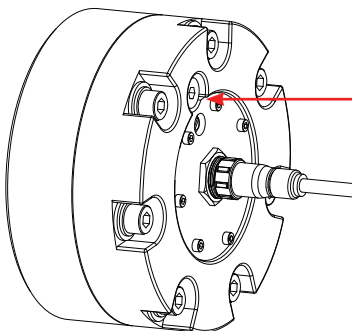
Spray Leak Detector Spray around the edge of the glass lens at the front of the light



Spray Leak Detector Spray around the interface between the light and the flange. Look for bubbles formed in the area spray which will highlight any leaks



- 5) Whilst the fitting is pressurized, using a leak detector spray, spray the seal between the light and the flange, and also spray around the front lens.
- 6) IF the pressure cannot be maintained then the seal is not adequate. **DO NOT LAUNCH THE VESSEL** until this issue has been resolved, and the light can maintain pressure.
- 7) Once the test is complete, release the pressure. Remove the test valve, and replace the sealing bolt.



Replace sealing washer and bolt

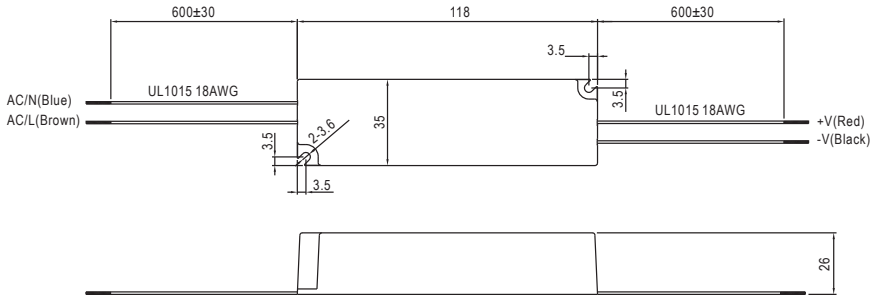
Operation - SY EYE HD-SDI Camera - All Models (60-0260 & 60-0273)

The SY EYE HD Camera is supplied with an AC/DC power supply which can be connected. There are two video outputs on the camera. CVBS and HD-SDI.

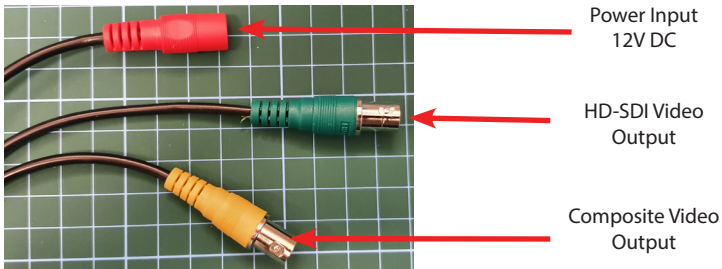
The camera is a full HD camera (1080p). The output of the camera is HD-SDI (BNC Connector), and should be connected to a suitable display screen, or suitable signal converter (e.g. HD-SDI to HDMI). HD-SDI is a high frequency signal, and any extension cables used must be suitable for use with HD-SDI signals. The HD-SDI co-ax cable can be extended up to 30m total length. Ensure that a good quality co-ax cable capable of carrying high frequency signals is used (e.g. RG 59). Longer lengths of cable are usually achieved by using a converter.

The camera also has a composite (CVBS) output which can be used if required.

- 1) Mount the supplied 12V DC power supply (AC / DC Converter). Connect to the mains supply. Ensure the PSU is connected to a suitable rated fuse or breaker. Do not power up until ready to test.



- 2) Plug the power jack of the PSU into the power connector on the camera.
- 3) Connect the HD-SDI or CVBS output to the video system using a suitable co-axial cable (e.g. RG59)
- 4) Turn on power and check the picture is displayed correctly on the video system



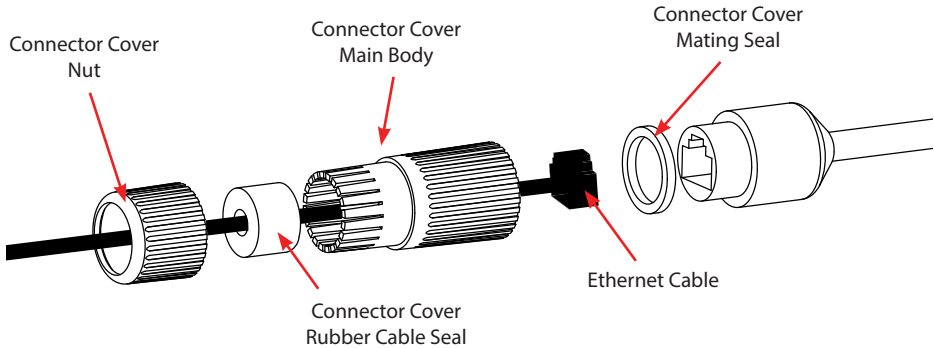
ALL CONNECTIONS MUST BE MADE IN A WATERPROOF JUNCTION BOX (NOT SUPPLIED) TO PREVENT ANY INGRESS.

SY EYE IP HD Camera – All Models (60-0428 & 60-0429)

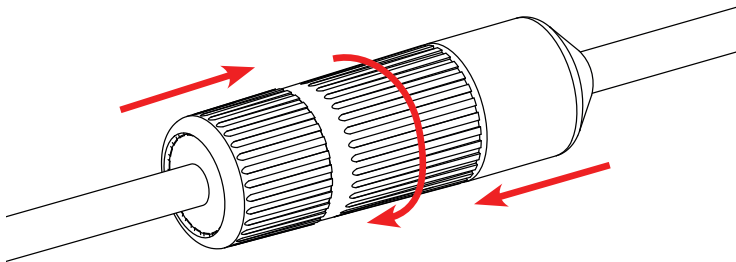
The SY EYE IP camera is intended to be used with a POE Ethernet system. There is an external 12V DC jack input if POE is not available (note that the PSU is not supplied).

CAUTION: USE ONLY ONE METHOD OF POWER. DO NOT USE POE AND EXTERNAL PSU AT THE SAME TIME

- 1) Fit the connector parts to the Ethernet cable



- 2) Connect the Ethernet connector to the camera cable
- 3) Tighten up the gland on the connector



- 4) Connect the Ethernet cable to the network. Check that the indicator LED on the connector is flashing
- 5) Search for the camera using suitable ONVIF software or system. Alternatively network scanning software (e.g. Fing) can be used to discover the IP address.
- 6) Add the camera to your CCTV system according to the manufacturer's instructions

Maintenance

The Lumishore SY series has been designed as a maintenance free product. Under normal operating conditions there should be no need to remove or replace a light / camera module from its Flange. If the lens or light / camera module has become damaged or stops working correctly, please contact Lumishore first to discuss the correct course of action.

The light / camera module retaining bolts should be inspected on a regular basis to ensure they are kept tight. Lumishore recommends general inspection of the light / camera module, driver and cable attachments every month.

Light / camera module removal and replacement.

If the light / camera module needs to be inspected or replaced, first ensure that the glass lens and seal are intact. Inspect from outside the vessel to ensure the lens is in place and there are no obvious cracks. From inside the vessel check for water ingress, use a small screwdriver to depress the inspection valve. If water is present DO NOT CONTINUE! The vessel will need to be out of the water before the light / camera module is removed.

If there is no water present it is safe to remove the light / camera. Unscrew the retaining bolts and remove the light / camera module carefully. Care should be taken when handling the light / camera to prevent damage to the LEDs or internal lens system. To replace the light / camera module follow the Lumishore Light module installation guide.

Do not attempt to replace the glass lens with the vessel in the water.

Cleaning

The glass lens should be kept clean with a plastic scraper or soft brush. Regular cleaning of the lens will ensure that the Light maintains optimum performance. Do not use an abrasive cloth or cleaning agent as permanent damage to the lens may occur. Take care not to scratch or damage the glass as this could impair the quality of picture on the camera

Warranty

LUMISHORE Ltd warrants the **SY EYE Camera** to be free from defects in workmanship and materials for a period of two years, starting from the date of original purchase. Misuse, abuse, improper installation, neglect, improper shipping, damage caused by disasters such as fire, flood, and lightning, installation by unqualified personnel, unauthorized repair or modification will void this warranty. For the avoidance of confusion and doubt, non-compliance with all installation, maintenance and operating instructions in this document constitute non-conformance with warranty terms.

