

SV31 Underwater Camera - Thru Hull



Introduction:

Congratulations on the purchase of your new underwater camera. Underwater Lights® USA, LLC takes pride in providing well designed, high quality and thoroughly tested products that allow you to “enhance your boating experience”. This product can be installed in your vessel for remote viewing, security and safety.

General Operating Information:

The commercial grade camera used in this product will provide robust and reliable operation under normal operating conditions.

A single video output cable can be connected from the camera junction box to most any television or remote monitor.

The camera can be operated while the vessel is underway.

Depending upon water clarity and lighting conditions, the camera can see up to 12 meters (40 feet).

General Safety Information:

This product is intended for use on fiberglass and wood hulled vessels.

Never try to install or remove product main body from vessel hull while the vessel is in the water (camera proper can be removed).

The camera junction box proper should be kept out of potentially explosive gas environments.

The main body must be electrically joined to the vessels grounding and cathodic protection system to prevent corrosion.

Always disconnect and lock-out power before working on this product.

The operating condition of all product components and electrical cabling should be visually inspected every six months.

Marine growth should be removed from the “viewport” glass using a soft brush for optimum camera performance.

Technical Specifications:

Camera = 520TVL resolution - Pyrex lense - 64° field of view - NTSC video output - Auto focus - Hermetically sealed body

Camera = Operating temperature -10°C (14°F) minimum to +40°C (104°F) maximum - Waterproof to 300 feet (91 meters)

Thru hull fitting glass = Borosilicate glass - 12.7mm (0.5”) thick - 58mm (2.3”) diameter net aperture (viewport)

Thru hull fitting dimensions = 130mm (5.12”) diameter x 203mm (8.0”) long - 3.7 kilograms (8.2 pounds) with camera installed

Thru hull fitting construction = Marine bronze - Black anodized marine aluminum alloy

Camera junction box dimensions = 149mm (5.87”) long x 65mm (2.56”) wide x 55mm (2.17”) tall - 270 grams (0.6 pounds)

Camera junction box power = 12VDC nominal (7-14VDC range) - 300mA nominal (1 Amp maximum)

Troubleshooting:

Please contact our technical support staff in Florida at 1-954-760-4447, Monday to Friday from 8:00 am to 5:00 pm EST.

Warranty:

Underwater Lights® USA, LLC warrants this product to be free from defects in workmanship and materials for a period of one year from the date of original purchase. Further, misuse, abuse, improper installation, neglect, improper shipping, damage caused by disasters such as fire, flood and lightning, unauthorized repair or modifications will void said warranty. Should your product prove defective during the warranty period, promptly contact Underwater Lights® USA, LLC for an RMA number and then return the product freight prepaid with the RMA number clearly marked on the outside of the shipping container.

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Installation:

This product should be installed at least 250-300mm (10-12") below the water line by qualified/approved personnel using proper tools and materials. The minimum hull thickness is 10mm (0.4") and maximum is 90mm (3.5") with an access area of at least 100mm (3.9") left behind the product for camera servicing.

After selecting a flat surface, cut a 100mm (4") diameter hole through the vessel hull in the desired location. Caution! Check that no electrical wiring, fuel lines, oil lines, water lines etc., pass near or through the intended hole location.

Remove parts (14), (6), (16), (7), (18), (5) + (4) from part (1). Carefully coat parts (1), (2) and inner surface of above cut hole with 3M 5200 Marine Adhesive or equivalent. Caution! Avoid placing adhesive on part (1) threads. Note: Exposed inner hole surface must be properly sealed before product installation to prevent potential water intrusion into the hull proper. Holding part (2), push the product through hull hole, slide part (4) over part (1) and then tighten part (5) hand tight. Note: Ensure that screw tips (15) are NOT touching part (4).

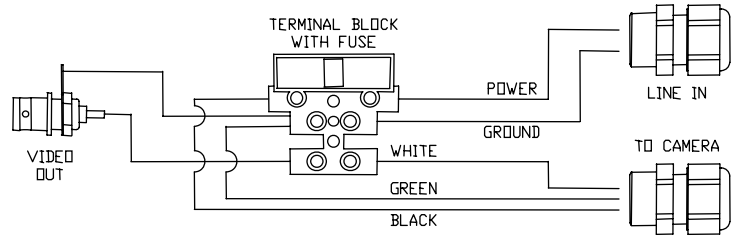
After the 3M 5200 Marine Adhesive is fully cured, evenly tighten six screws (15) to 9 Nm (7 ft/lbs) using a 5mm allen wrench. Assemble parts (18), (7), (16), (6) and evenly tighten six nuts (14) to 2 Nm (1.5 ft/lbs). Note: Apply anti-seize compound to part (16) threads and hand tighten. Upon completing product installation, it is highly recommended to coat part (2) with antifouling paint and connect a wire lead from part (5) M4 x 0.7 tapped hole to the vessels grounding and cathodic protection system.

Mount camera junction box (20) in a dry location and route cable (19) accordingly. Caution! Avoid making tight bends and/or passing electrical cables over sharp edges/surfaces. Make remaining electrical connections per wiring diagram below.

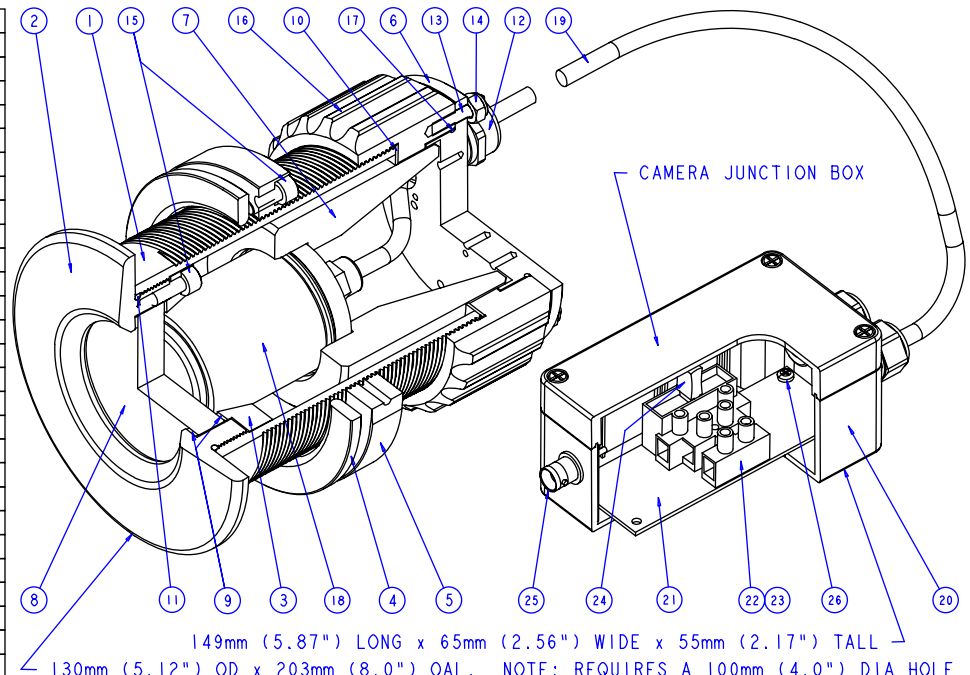
Serviceable Parts:

Camera (18) servicing is done by removing parts (14), (6) + (7) from part (1). Note! Ensure camera is properly oriented "up" and that lense is clean when reversing said procedure.

Glass (8) replacement is done by removing parts (14), (6), (7), (18), (15), (3) + (9) when the vessel is out of the water. Upon thoroughly cleaning all surfaces, reverse said procedure to assemble and tighten six screws (15) in a criss-cross pattern to 9 Nm (7 ft/lbs) using a 5mm allen wrench.



MODEL D13A11A99 12VDC		
BALLOON	PART	DESCRIPTION
1	10001	MAIN BODY
2	10002	FRONT FLANGE
3	10003	GLASS RETAINING RING
4	10006	COMPRESSION RING
5	10007	LOCKING RING
6	10009	PROJECTOR LID
7	31007	CAMERA HOLDER
8	10010	GLASS
9	10011	GLASS GASKET
10	10012	CONNECTING RING GASKET
11	10015	FRONT FLANGE O-RING
12	10019	CABLE STRAIN RELIEF
13	10024	M6 x 1.0 x 25LG SST SET SCREW
14	10025	M6 x 1.0 SST HEX LOCKNUT
15	10020	M6 x 1.0 x 14LG SST SHCS
16	10008	CONNECTING RING
17	10014	PROJECTOR LID O-RING
18	31006	CAMERA WITH CABLE
19	31009	CAMERA CABLE ONLY
20	27027	CAMERA JUNCTION BOX
21	27028	MOUNTING PLATE
22	27029	FUSED TERMINAL BLOCK
23	27032	M3.5 x 0.6 x 12LG PPHS
24	27030	FAST BLOW FUSE
25	27031	VIDEO OUT CONNECTOR
26	27033	M3 x 0.5 x 5LG SST PPHS



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