

Sonavision Limited

BOREHOLE CAMERA

END VIEW CAMERA UNIT

OPERATION AND INSTRUCTION MANUAL

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1 GENERAL INFORMATION

1.1 Introduction and Warranty

This manual accompanies the **BOREHOLE CAMERA END VIEW CAMERA UNIT**. It contains information on operation and maintenance of the camera unit and provides the user with a manufacturer's recommended spares package.

The **BOREHOLE CAMERA END VIEW CAMERA UNIT** is warranted against manufacturing defects in workmanship and materials for a period of 12 months from date of shipment. For more details on Sonavision Ltd warranty, please refer to Sonavision Ltd Terms and Conditions of Warranty.

1.2 Equipment Description

The **BOREHOLE CAMERA END VIEW CAMERA UNIT** is an underwater camera rated for operation to 250m water depth. It consists of a stainless steel housing, incorporating an internal metal chassis, a colour camera module, and an LED assembly. The unit is intended to be attached to the BOREHOLE CAMERA Panning Camera and is fitted with a plastic adaptor for this purpose.

The front of the camera is manufactured from clear acrylic. These components are easily removed with the special tool supplied to allow access to the camera lens for focus adjustment.

The LED assembly consists of 20 white, high brightness LED's. A series of resistors controls the LED currents.

The unit operates from 12vdc nominal. The LED's and camera are operated from the same supply and cannot be independently controlled.

2 OPERATING INSTRUCTIONS

The following operating instructions are intended as a guide only. Details of the operation will depend upon the type of control unit which is used. These instructions relate to control units supplied by Sonavision.

The camera is connected to a compatible BOREHOLE CAMERA unit. Operation is then a matter of controlling the relevant switches on the surface unit to provide power and monitor the camera signal.

3 MAINTENANCE INSTRUCTIONS

3.1 Troubleshooting

CAMERA

Check the camera for signs of damage and possible water ingress. If there is water ingress refer to section 3.4.

LIGHTS

The LED units fitted to this camera have an extremely long life and should not require replacement during the life of the camera. In the event of failure, the complete LED assembly should be changed out. Refer to the procedure below.

3.2 Disassembly and Reassembly Procedures

WARNING

THIS PROCEDURE SHOULD ONLY BE FOLLOWED TO ALLOW THE USER TO CHANGE THE LED ASSEMBLY OR ADJUST THE CAMERA FOCUS. IN ADDITION, IT MAY BE USED TO CARRY OUT SIMPLE MAINTENANCE OR FAULT FINDING UNDER THE GUIDANCE OF SONAVISION LTD OR ITS AUTHORISED AGENTS.

PROCEDURE FOR DISASSEMBLY

1. Remove the camera from the BOREHOLE CAMERA if fitted.
2. Dry the outer surfaces, if necessary, and then remove stainless steel ring which holds on the lens assemblies using the special spanner.
3. Carefully remove both lenses (inner and outer) to reveal the camera lens focus ring and the LED assembly.
4. Focus the camera if required without further disassembly.
5. The camera and LED assembly may be removed by extracting the four M2 screws (those at 90 degrees to each other) holding the PCB in place.
6. Carefully pull the internal chassis with the LED pcb out of the stainless steel housing. Take care not to stretch the wires connecting the rear connector pins.
7. If the LED assembly is to be replaced, disconnect the wiring behind the camera and then remove the remaining two M2 screws holding the PCB to the chassis. The LED pcb can now be separated from the chassis.

PROCEDURE FOR RE-ASSEMBLY

1. Assemble the camera and LED unit to the chassis. Note the location of the nylon screws and washers which are intended to isolate the camera wiring from the chassis.

2. Clean and apply a small amount of silicon grease to the o-rings around the lenses. Do not apply large quantities of grease.
3. Insert the light lens into the housing followed by the stainless steel ring containing the camera lens. Ensure that the brass sleeve is correctly located under the camera lens.

3.3 Flooded Housing Instructions

In the event that the camera unit has been damaged and flooded, the following procedure should be followed.

1. Turn off the power IMMEDIATELY.
2. Open the housing as per 3.2 disassembly procedure.
3. Thoroughly rinse the components in fresh or distilled water.
4. Allow the components to dry out in a warm dry environment.
5. Loosely re-assemble the camera and return to Stenmar Ltd or your agent.
6. Notify the consignee, so that we may act quickly and limit the damage when the system arrives.

4 **RECOMMENDED SPARES**

CAMERA

Camera Acrylic lens
Light Acrylic lens
O-Ring Kit.

GENERAL

Molycote Type MS111 Grease.
Stainless sleeve spanner
Selection of general electricians tools

5 **SPECIFICATIONS**

CAMERA

PHYSICAL

Diameter	63mm
Length	78mm (including BOREHOLE CAMERA adaptor)

WEIGHT

In Air	0.5kg approx.
In Water	0.2kg (approximate)

MATERIALS

Housing	Stainless Steel, Acetal and Acrylic
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OPTICAL

Lens	f2.8 3mm adjustable focus
Field of view	70 degrees diagonal (in-air)
Focus	Adjustable after disassembly
Min Illumination	1.2 lux
Imager	1/4 inch ccd sensor

LIGHTING

Construction	20 off White LED
Consumption	200mA at 12Vdc

POWER REQUIREMENTS

Panning Camera	12vdc +/- 10% at 310mA approximately
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END OF DOCUMENT