

DEEPSEA
Power & Light®



Wide-i SeaCam®



Operator's Manual

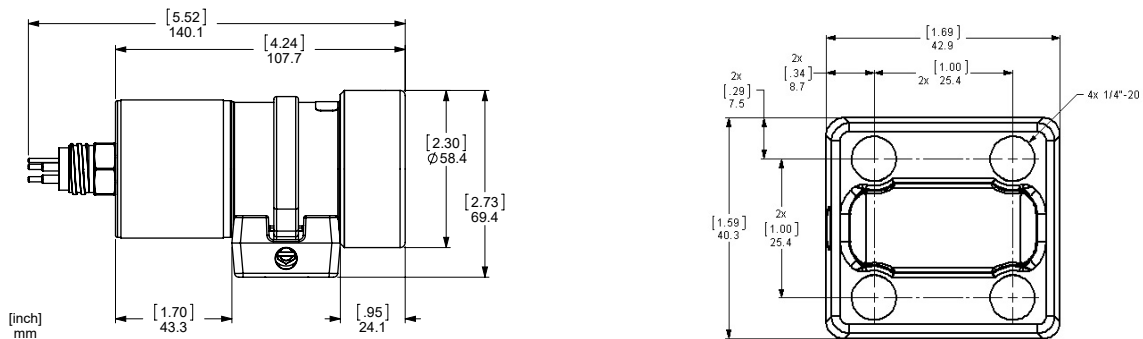
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Specification Overview



	WSC-3060 Black and White	WSC-4060 Color
Optical Specifications		
Lens	Air: 38 mm [1.5 in] to infinity Water: 25 mm [1.0 in.] to infinity	
Focus	Fixed	
FOV in Air	160° H x 146° V	
FOV in Water	125° H x 89° V	
Video Specifications		
Image Sensor	1/3 inch CCD Sensor	
Sensor Resolution	EIA: 811 H x 508 V CCIR: 795 H x 596 V	PAL: 795 H x 596 V
Measured Resolution	570 TVL (center)	450 TVL (center)
Faceplate Illumination	0.002 Lux F/1.4	0.1 Lux F/1.2
Signal to Noise	46 dB	> 50 dB
Video Output	Composite, 1.0 Vp-p 75 ohm, unbalanced	
Video Format	EIA or CCIR	PAL
Environmental Specifications		
Depth Rating	6,000 m	
Operational Temperature	-10 °C to 40 °C [-14 °F to 104 °F]	
Storage Temperature	-30 °C to 70 °C [-22 °F to 158 °F]	
Electrical Specifications		
Power	11~30 VDC	
Current	160 mA	145 mA
Mechanical Specifications		
Housing	Hard Anodized 6013 Aluminum	
Port	Optically Polished Glass	
Outer Diameter	58.4 mm [2.30 in]	
Overall Length (Without Connector)	107.7 mm [4.24 in]	
Weight in Air	0.542 kg [1.196 lbs.]	
Weight in Water	0.29 kg [0.639 lbs.]	
Connector		
Default	SEACON MCBH4MP Contact sales for more options.	

* Specifications subject to change without notice.

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Safety Symbols

In this operator's manual and on the product, safety symbols are used to communicate important safety information. This section is provided to improve understanding of these symbols.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



DANGER indicates a hazardous situation which, if not avoided, could result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in damage to the product or bodily harm.



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE indicates information that relates to the protection of property.



This symbol means read the operator's manual carefully before using the equipment. The operator's manual contains important information on the safe and proper operation of the equipment.



This symbol means always wear safety glasses with side shields or goggles when handling or using this equipment to reduce the risk of eye injury.



This symbol indicates the risk of electrical shock.



This symbol indicates the risk of electrostatic discharge (ESD). Always use ESD safe practices when handling equipment.



This symbol indicates a potentially hot surface that may cause burns or ignition.

General Notes & Warnings

The Wide-i SeaCam supports a variety of connectors, camera modules, depth ratings, and pin-outs. By looking into the front port of the camera, the user can see the model, depth rating, video format as well as the pin out orientation. Be sure to verify pin-out orientation before use.

It is important when preparing the system for deployment that the cable, at both the camera and topside ends, be carefully dressed to provide complete strain relief to the connectors. Failure of the strain relief provisions will almost certainly damage the connectors and possibly other elements of the system.

DANGER

Do not operate any high voltage electrical equipment in or around water without using a Ground Fault Circuit Interrupter (GFCI) and an isolation transformer, especially when divers are in the water.

WARNING

Never place the camera in a vice or other hard clamping tool. Should it become necessary to hold the camera more tightly than can be

managed by hand, use a clean, good quality strap wrench.

Pre & Post Dive Inspection

Rinse your Wide-i SeaCam in fresh water after use in saltwater.

Always check to make sure that the rear bulkhead connector assembly is secured before deployment.

Before and after each deployment, check the following areas for damage, wear or corrosion:

- Rear bulkhead connector assembly
- Video cable
- Front window
- Retaining cowl

Operation Procedures

Operation Instruction

1. Prepare a power supply with 11~30 VDC output.
2. Plug the red [positive(+)] and black [negative(-)] banana plugs of the camera cable into their respective jacks on the power supply.
3. Plug the BNC connector on the topside of the

cable into the monitor or VCR video-in jack (a BNC-to-RCA adapter may be required by the monitor/VCR in use).

4. Lubricate the camera bulkhead connector with an appropriate silicone lubricant (spray type recommended), and using a linear motion plug the female inline connector into the male bulkhead connector on the back of the camera.
5. Screw the locking sleeves together firmly (hand tighten. Do not use tools).
6. The camera is now ready for operation; switch the power supply ON to power the camera. The camera draws approximately 160 mA of current during operation, and will work when supplied between 11~30 VDC.

Video Output

The Wide-i SeaCam does an exceptional job at giving a high quality wide angle image even in very low light conditions. This camera is capable of producing an incredible 125° (H) x 89° (V) degree field of view under water. Just like with any wide angle lens, users should be aware of vignetting effect (black corners). *Figure 1* below shows a standard still image taken from the Wide-i SeaCam clearly showing the vignetting effect on the four corners of image.



Figure 1: Sample Image

⚠ DANGER



After each deployment, carefully check to make sure the camera has not flooded. It is possible for the camera to partially flood and then reseal itself while underwater. Upon surfacing, the camera can become internally pressurized, which may be potentially dangerous. Additionally, if the power remains on when the camera has partially flooded, it is possible for electrolytic generation of an explosive mixture of hydrogen and oxygen gases. If a camera appears flooded upon removal from the water, it should be treated as potentially dangerous. Point the camera away from persons and valuable equipment and make sure that the power is discon-

nected. See the Flooding Repair Procedure for more information.

Flooding Repair Procedure



If the camera stops working while underwater, you should assume that it has been flooded. When working on a potentially flooded camera, it is important to use appropriate personal protective equipment to include, at a minimum, eye and hand protection.

1. Immediately turn off the power to the unit.
2. Open the housing by removing the rear end cap-retaining ring. Grasp the rear end cap in one hand and the camera housing in the other. With care, separate the two components using a linear motion. If required gently twist components while separating.
3. Pour out any water trapped in the housing.
4. If the camera is completely flooded, rinse the internal components with clean fresh water in order to minimize contamination and corrosion.
5. Allow parts to dry in air or a convection oven set at 60° C (190° F). **IMPORTANT!** DeepSea Power & Light cannot be responsible for any damage incurred during emergency field repairs. Such repairs should be undertaken only as a last resort and by qualified personnel.

Troubleshooting

1. If the camera stops working while underwater, assume that it has flooded. See Flooding Repair procedure.
2. Once determined that the camera is not flooded, or if the camera does not turn on during pre-deployment checks, troubleshoot in the following sequence:
 - a. Check the cable/inline connector to make sure that correct voltage and current are being supplied, and that the pinout matches the camera. See page 2 of this manual for electrical specs and standard connector pinouts.
 - b. Remove the endcap to access the bulkhead connector. Inspect the assembly for visual signs of wear. Use a multi-meter check for continuity or shorts in the connector. Try a spare connector, if available.
 - c. If the camera still does not work, return it to DeepSea Power & Light using the RMA Procedure.

RMA Procedure for Repair

For warranty and non-warranty repairs, please contact DeepSea Power & Light for an RMA number prior to returning the item. Please have the light model number, serial number, and any other pertinent information along with a description of the problem on hand when calling, or include them in a fax or e-mail.

Tel: 858-576-1261

Fax: 858-576-0219

Email: RMA@deepsea.com

When shipping the item, be sure that the freight is pre-paid (CODs will not be accepted) and that the RMA number is clearly printed on the outside of the box.

All shipments should be sent to the address below:

DeepSea Power & Light

Attn: RMA #####

4033 Ruffin Road

San Diego, CA 92123-1817

U.S.A

Warranty Information

Limited Warranty

Seller warrants that the goods (except internal electronic components) sold under this contract will be free from defect in material and workmanship for a period of two years from the date of shipment from the factory, if they have been properly used. Internal electronic components are warranted for 90 days from the date of shipment from the factory, if they have been properly used. This warranty will be limited to the repair or replacement of parts and the necessary labor and services required to repair the goods. IT IS EXPRESSLY AGREED THAT THIS WARRANTY WILL BE IN LIEU OF ALL WARRANTIES OF FITNESS AND IN LIEU OF THE WARRANTY OF MERCHANTABILITY. This warranty is the exclusive and only warranty to pass with the goods under this contract. No agent, employee, or representative of the Seller has any authority to bind Seller to any information, representation, or warranty concerning the goods sold under this contract, and unless an affirmation, representation, or warranty made by an agent, employee, or representative is specifically included within this contract, it will not be enforceable by Buyer. If notice of defect is given to DeepSea Power & Light LLC within such 90 day or two-year warranty period, the sole obligation of DeepSea Power & Light LLC shall be to furnish new or repaired parts free of charge in exchange for parts which have been proved defective and does not include any other costs such as the cost of removal of the defective part, installation, labor, or consequential damages of any

kind, the exclusive remedy being to require DeepSea Power & Light LLC to furnish such new parts. Under no circumstances shall the Buyer be entitled to recover any incidental damages as that term is defined in Commercial Code §2715.



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