

# LED Multi-SeaCam® User Manual Rev. 08/03/05

P/N 740-067-601

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**Camera Options:** The Multi-SeaCam® supports a variety of connectors, camera modules, depth ratings, pin-outs.

Feature	Option	Description	Comments
Model	1055	Black and White	
	1065	Low Light Black & White Camera	
	2065	Low Light Color Camera	
Video Format	NTSC/EIA	Color (NTSC) or B&W (EIA)	U.S. standard
Format	PAL/CCIR	Color (PAL) or B&W (CCIR),	European standard
Depth Rating	4000 msw	4000 msw	Titanium housing
Pin-Out	Customer choice	Customer-defined pin-out	
Connector	(Not on label)	Customer-defined	

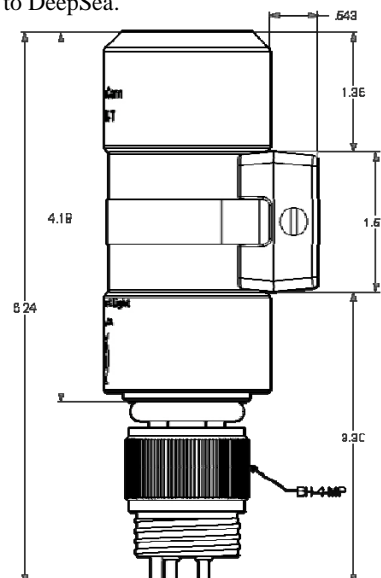
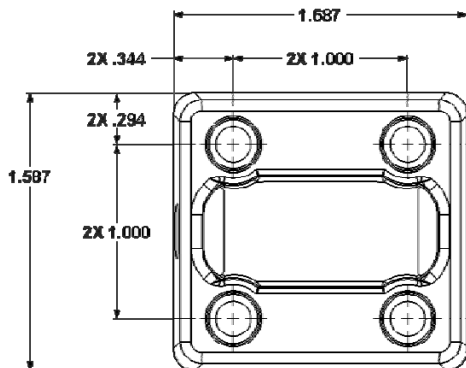
**Camera Operations:** WARNING: Whenever AC or DC power is used in the vicinity of water, we **strongly** recommend that a Ground Fault Circuit Interrupt (GFCI) or other safety device be utilized to minimize the chance of electric shock due to a short circuit.

First, plug the DC power supply into the GFCI (make sure the switch on the power supply is in the OFF position). Plug the red (positive) and black (return) banana plugs of the camera cable into their respective jacks on the power supply. Plug the BNC connector on this end 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). Lubricate the camera bulkhead connector with an appropriate silicone lubricant, spray recommended, and using a linear motion plug the female underwater connector on the other end of the cable into the male bulkhead connector on the back of the camera. Screw the locking sleeves together firmly (hand tight--do not use tools). The camera is now ready for operation; switch the power supply ON to power the camera.

**The LED ring built into this camera will operate in four modes: Hi, Med, low, Off. The illumination is adjusted by toggling the power to the camera on and off. If camera is powered by a buffered power supply, leave switch in off position for at least 3 seconds when toggling through LED illumination levels. If power is off for more than 10 seconds the camera will default to the Hi setting.**

**Camera Flooding Emergency Procedure:** WARNING: In certain rare instances, a pressure case can flood and then reseal itself which may result in internal pressurization. Additionally, if the power is applied while water is present inside the case, hydrogen and oxygen can be generated by electrolysis, forming an explosive mixture.

- 1) Immediately turn off the power to the unit.
- 2) Open the housing by removing the rear endcap retaining ring. Grasp the rear endcap 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 vacuum chamber.
- 6) Loosely assemble the camera, call DeepSea for an RMA number, and return camera to DeepSea.

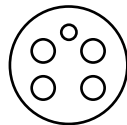


## LED Multi-SeaCam® Specifications

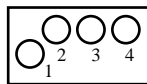
	LED Multi <i>SeaCam</i> ® 1055	LED Multi <i>SeaCam</i> ® 1065	LED Multi <i>SeaCam</i> ® 2065
<b>MECHANICAL</b>	Black and white	Low light Black and White	Low Light Color
Housing:	Titanium	Titanium	Titanium
Port:	Sapphire	Sapphire	Sapphire
Outer Diameter:	4.74 cm (1.87 in.)	4.74 cm (1.87 in.)	4.74 cm (1.87 in.)
Overall Length (w/o connector):	10.6 cm (4.19in.)	10.6 cm (4.19in.)	10.6 cm (4.19in.)
Weight in Air:	459 g (16 oz.)	459 g (16 oz.)	459 g (16 oz.)
Weight in Water:	112 g (4 oz.)	112 g (4 oz.)	112 g (4 oz.)
<b>OPTICAL</b>			
Lens:	2.8 mm, f2.8	5 mm, f2.8	3.0 mm, f2.0, wide angle
Focus:	Fixed focus, wide angle	Fixed focus	Fixed focus, wide angle
Depth of Field:	10 cm (4 in.) to infinity	30 cm (12 in.) to infinity	10 cm (4 in.) to infinity
Field of View in Air:	106 deg. (H) x 78 deg. (V) x 132 deg. (D)	77 deg. (H) x 56 deg. (V) x 98 deg. (D)	95 deg. (H) x 75 deg. (V) x 130 deg. (D)
Field of View in Water:	80 deg. (H) x 59 deg. (V) x 98 deg. (D)	57 deg. (H) x 45 deg. (V) x 71 deg. (D)	75 deg. (H) x 60 deg. (V) x 85 deg. (D)
<b>VIDEO</b>			
Image Sensor:	1/3-inch CCD image sensor	1/2-inch CCD image sensor	1/3-inch CCD image sensor
Number of Pixels:	537 (H) x 505 (V) (EIA); 537 (H) x 595 (V) (CCIR)	811 (H) x 508 (V) (EIA); 795(H) x 596 (V) (CCIR)	768 (H) x 494 (V) (NTSC); 752 (H) x 582 (V) (PAL)
Resolution:	400+ TV lines horizontal	570 TV lines horizontal	460 TV lines horizontal
Scene Illumination:	0.27 Lux at f2.8	0.01 Lux at f2.8	1.1 lux at f2.0
Signal to Noise:	More than 45 dB (AGC off)	46 dB (AGC off)	More than 45 dB
Video Output:	1.0 volt peak-to-peak into 75 ohm	1.0 volt peak-to-peak into 75 ohm	1.0 volt peak-to-peak into 75 ohm
Video Format:	EIA (RS170), CCIR	EIA (RS170), CCIR	NTSC, PAL, composite standard
<b>ELECTRICAL</b>			
Input Power:	Camera 11-30 volts DC Below 14 volts DC, the LED output may be diminished	Camera 11-30 volts DC Below 14 volts DC, the LED output may be diminished	Camera 11-30 volts DC Below 14 volts DC, the LED output may be diminished
Current:	Camera 110 mA LED's, 0-250mA Total max 360mA	Camera 160 mA LED's, 0-250mA Total max 410 mA	Camera 200 mA LED's 0-250 mA Total max 450 mA
<b>ENVIRONMENTAL</b>			
Depth:	4,000 meters	4,000 meters	4,000 meters
Operating Temperature:	-20 deg. C to +40 deg. C	-10 deg. C to +40 deg. C	-30 deg. C to +40 deg. C
Storage Temperature:	-30 deg. C to +70 deg. C	-30 deg. C to +70 deg. C	-30 deg. C to +70 deg. C

### ELECTRICAL

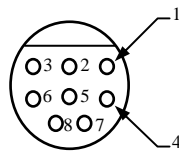
Pin-out:



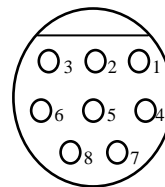
**BH4MP**  
1 = Ground  
2 = Power  
3 = Video  
4 = Not Used



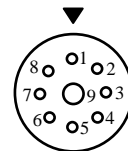
**LPBH4MP**  
1 = Ground  
2 = Power  
3 = Video  
4 = Not Used



**IE55-1508-BCR**  
Or  
**B5507-1508**  
1 = Ground  
2 = Power  
3 = Video  
4 = Not Used  
5 = Not Used  
6 = Not Used  
7 = Not Used  
8 = Not Used



**IE55-2008-BCR**  
Or  
**B5507-2008**  
1 = Ground  
2 = Power  
3 = Video  
4 = Not Used  
5 = Not Used  
6 = Not Used  
7 = Not Used  
8 = Not Used



**MSAJ-9-BCR**  
1 = Power  
2 = Ground  
3 = Video  
4 = Not Used  
5 = Not Used  
6 = Not Used  
7 = Not Used  
8 = Not Used  
9 = Not Used



*Specifications subject to change without notice*

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