



SeaLaser 100 User Manual



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SEALASER 100 SUMMARY

The SeaLaser 100 is a low cost, lightweight underwater scaling, rangefinding, and aiming device that utilizes a high quality solid state laser diode module. It can be used in pairs or arrays of parallel-aligned beams to determine sizes/scale of viewed objects. Used in an array of three parallel plus one oblique (four total) it can determine zoom lens focal length setting as well.

The 5 mW low cost unit is recommended for close-up applications out to about 1-meter range, whereas the 15 mW high power 635nm unit is good to 5-8 meters range. The shorter 635nm wavelength penetrates water much better than does the near IR 670nm low cost laser. The beam sharp focus distance is a standard factory-set 1 meter.

An internal power regulation board allows operation to 24 volts DC and protects the laser diode from most voltage transients, and is internally fused. This is important for applications using long cables or those that might have switching transients. It has a scratch resistant SAR optical port.

NOTE: The usable range is a function of ambient light levels, water conditions, and camera sensitivity.

SEALASER 100 SPECIFICATIONS

MECHANICAL

Housing Material:	Acetal plastic (Delrin)
Port:	SAR Acrylic
Length:	15.24 cm (6.0 in.) excluding connector
Diameter:	3.0 cm (1.2 in.)
Weight in Air:	227 g laser only, 300 g with bracket
Weight in Water:	67 g laser only, 140 g with bracket
Other:	Mounting bracket included

LASER

Type:	Semi-conductor laser diode Class III-A (670 nm) Semi-conductor laser diode Class III-B (635 nm)
Beam Diameter:	1.8 mm x 0.5 mm
Wavelength:	635 nm (15 mW) and 670 nm (5 mW)
Beam Divergence:	0.09 mRadians x 0.19 mRadians
Power:	5 mW (670 nm) and 15 mW (635 nm)
Beam Alignment:	Beam runout 5 cm at 10 meters max.

ELECTRICAL

Voltage:	5-24 VDC
Connector:	BH2M standard, others available

ENVIRONMENTAL

Depth:	2,000 meters (6,500 feet)
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OTHER

Option:	Beam focus distance; factory default setting is 1 meter
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SEALASER 100 PRE- AND POST-DEPLOYMENT CHECKLIST: Each SeaLaser 100 is shipped ready for immediate use. To ensure that the laser will perform reliably, please observe the following maintenance guidelines:

1. Rinse the laser with fresh water after use in salt water.
2. Always check to make sure that the rear bulkhead connector assembly is secure before deployment.
4. After each deployment, examine the power cable and rear connector for damage.

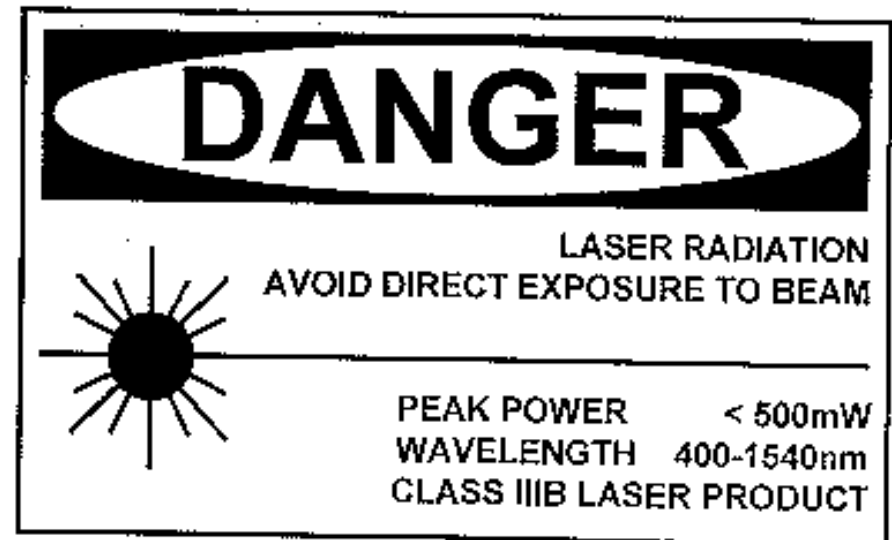
Warning: After each deployment, carefully check to make sure the laser has not flooded. It is possible for the laser to partially flood and then reseal itself while underwater. Upon surfacing, the laser can become internally pressurized, which may be potentially dangerous. Additionally, if the power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

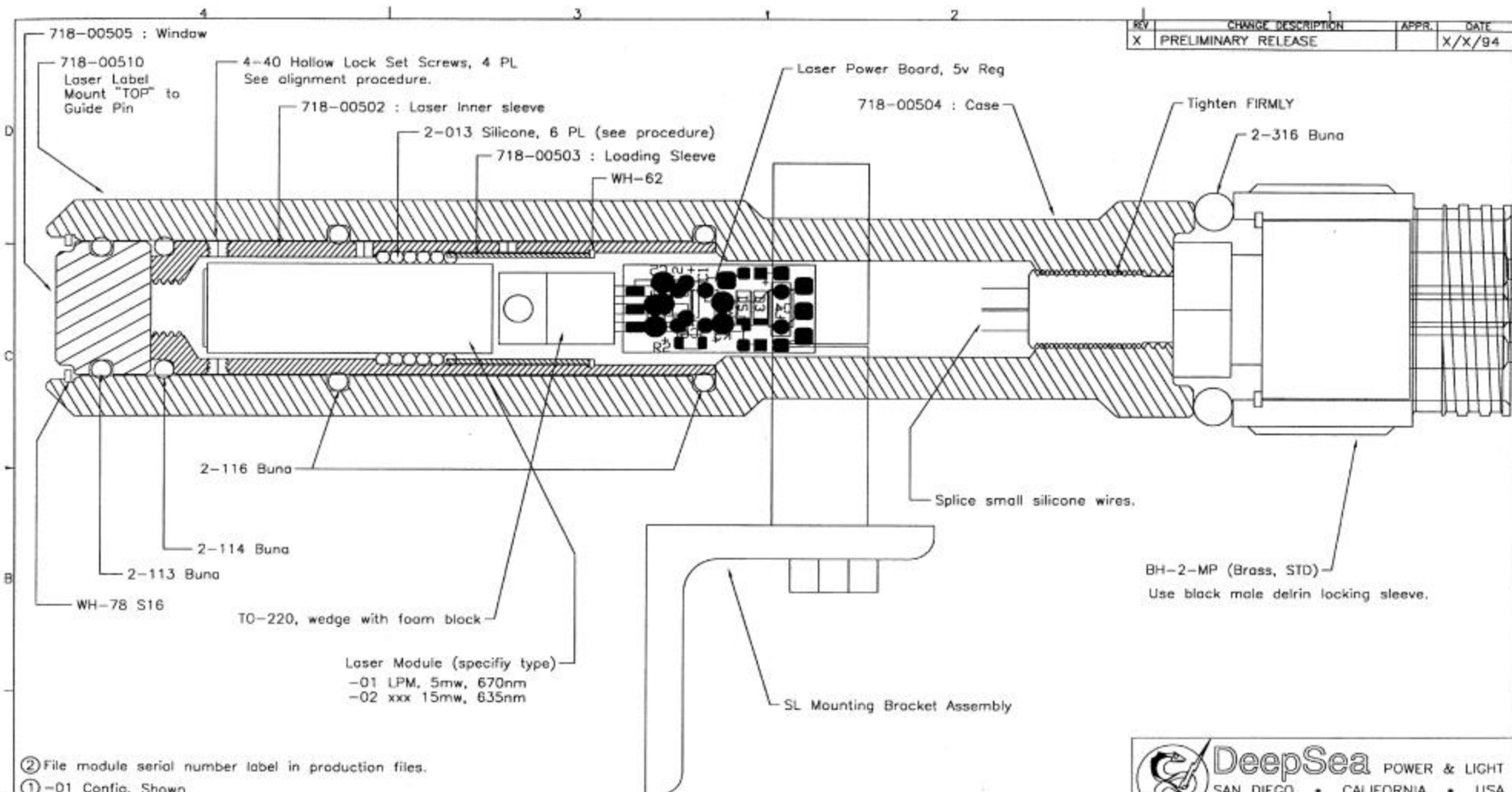
Options

Model Number	Part Number	Description
IL2FS	140-00060	BH2MP mating connector with female locking sleeve on 18" (0.5m) whip
UBSL	774-00001	L-bracket, small

Spare Parts

Model Number	Part Number	Description
UBSC	774-00002/3	UBS mounting collar, small





② File module serial number label in production files.

① -01 Config. Shown

Notes:

TOLERANCES UNLESS OTHERWISE SPECIFIED				MATERIAL		As Noted		ENG		M. Olsson		TITLE			
XX-	±.02	ALL DIMENSIONS ARE IN INCHES[MM]		SIZE	NA		DRAW	M. Olsson		Assembly					
XX	±.01	REMOVE ALL BURRS		ANCHORING	See Note 'P'		CHECK			SeoLaser 100 : SLZR-100					
XXX LENGTHS	±.005	BREAK ALL SHARP EDGES		PLATING	See Note 'H'		DESIGN DATE	Jan. 12, 1995		SIZE		718-00506			
XXX DIAMETERS	±.002	DIMENSIONS APPLY BEFORE PLATING		PIST			LAST UPDATE	Jan. 13, 1995		DWGS\718\005\00506X01		DWG CODE ODEN2			
HOLES	±.003	DO NOT SCALE DRAWING		PROCESS							REV		X		
ANGULAR	±.5°	FINISH	64	FINISH	12					MASTER DRAWING		\$718005.dwg			
FRACTIONAL	±1/64	ALL SURF	✓	SEAL SURF	✓					PLOT CYCLE #6		SCALE 2=1			
DGN BY NEXT ASSEMBLY				USED ON		CONTRACT		NA		SHEET		1 OF 1			
APPLICATION															

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