



SeaLaser® 100



DeepSea Power & Light, Inc.

4033 Ruffin Rd., San Diego, CA 92123

PHONE: (858) 576-1261 FAX: (858) 576-0219

E-mail info@deepsea.com, Web Page <http://www.deepsea.com>

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SEALASER® 100 SUMMARY

The SeaLaser® 100 is a low cost, lightweight underwater scaling, range finding, 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 and scale of viewed objects.

An internal power regulation board protects the laser diode from most voltage transients, overheat condition, reverse voltage, and cold temperature start-ups. It is internally fused. This is helpful for applications using long cables or those that might have switching transients. It has a scratch resistant SAR Acrylic optical port. It is recommended the laser be operated for only short periods of time in air to provide both personnel safety and adequate heat sinking of the laser module.

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

SEALASER® 100 SPECIFICATIONS

MECHANICAL

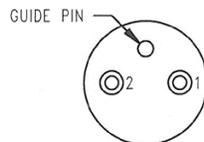
Housing Material: Acetal plastic (Delrin)
 Port: Acrylic
 Length: 15.24 cm (6.0 in.) excluding connector
 Diameter: 3.0 cm (1.2 in.)
 Weight in Air: 227 g laser only, 300 g with bracket
 Weight in Water: 67 g laser only, 140 g with bracket
 Other: Mounting bracket included

LASER

Type: Continuous Wave (CW) Semi-conductor laser diode Class III-A
 Beam Diameter: RED: elliptical, 1.8 mm x 0.5 mm; GREEN: circular, <2 mm Dia
 Optional Fan Angle of Line: Approximately 60 degrees
 Wavelength: RED (635 nm); GREEN (532 nm)
 Beam Divergence: RED: 0.09 mRad x 0.19 mRad; GREEN: <1.2mRad
 Power: <5 mW (Class III-A)
 Beam Off-center Alignment: 5 cm at 10 meters max.
 Optimum Operating Temp: RED -10 to +40°C / GREEN +1 to +30°C (lasers produce maximum power output at mid-temperature range)
 Line Laser Operating Temp: RED -10 to +40°C / GREEN -10 to +40°C

ELECTRICAL

Voltage: 7-27 VDC (Pin 1-NEG, Pin 2- POS)
 Pin-out:



2 CONTACT

Impulse BH2MP
Pin 1: NEG; Pin 2: POS

ENVIRONMENTAL

Depth: 2,000 meters (6,500 feet)
 OTHER Option: Beam focus distance (red); factory default setting is 10-feet (3.3m).

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 is secure before deployment.
3. After each deployment, examine the power cable and rear connector for damage.

Warnings:

1) Protect your eyes. Avoid looking directly into the laser beam, especially when wearing reading glasses or other optical magnifiers. Laser radiation is emitted from this device. Be careful of laser bounce off the water, a wet deck, portholes, and other reflective surfaces. Though generally safe, a Class IIIA laser can produce spot blindness under the right conditions. It is recommended the laser be operated for only brief periods of time in air to provide both personnel safety and adequate heat sinking of the laser module.

2) If a laser appears flooded, disconnect the power immediately. If water is determined to be present, carefully loosen the rear connector to vent any possible internal pressure and return to the factory for possible repair.

Cold water operational note: The green SeaLaser 100 laser module has a higher optimum operating temperature than the red SeaLaser. DeepSea recommends turning on the green SeaLaser 2-3 minutes prior to its intended use to allow the laser module to come to its stable operating temperature to produce maximum intensity. System integrators can test the SeaLaser 100 using their system under expected operational conditions to determine a more precise warm-up time for their specific application.

Options

Model Number	Part Number	Description
IL2FS	706-005-003-0A-145	BH2MP mating connector with female locking sleeve on 18+(0.5m) whip
UBSL	774-000-018-0A	L-bracket, small

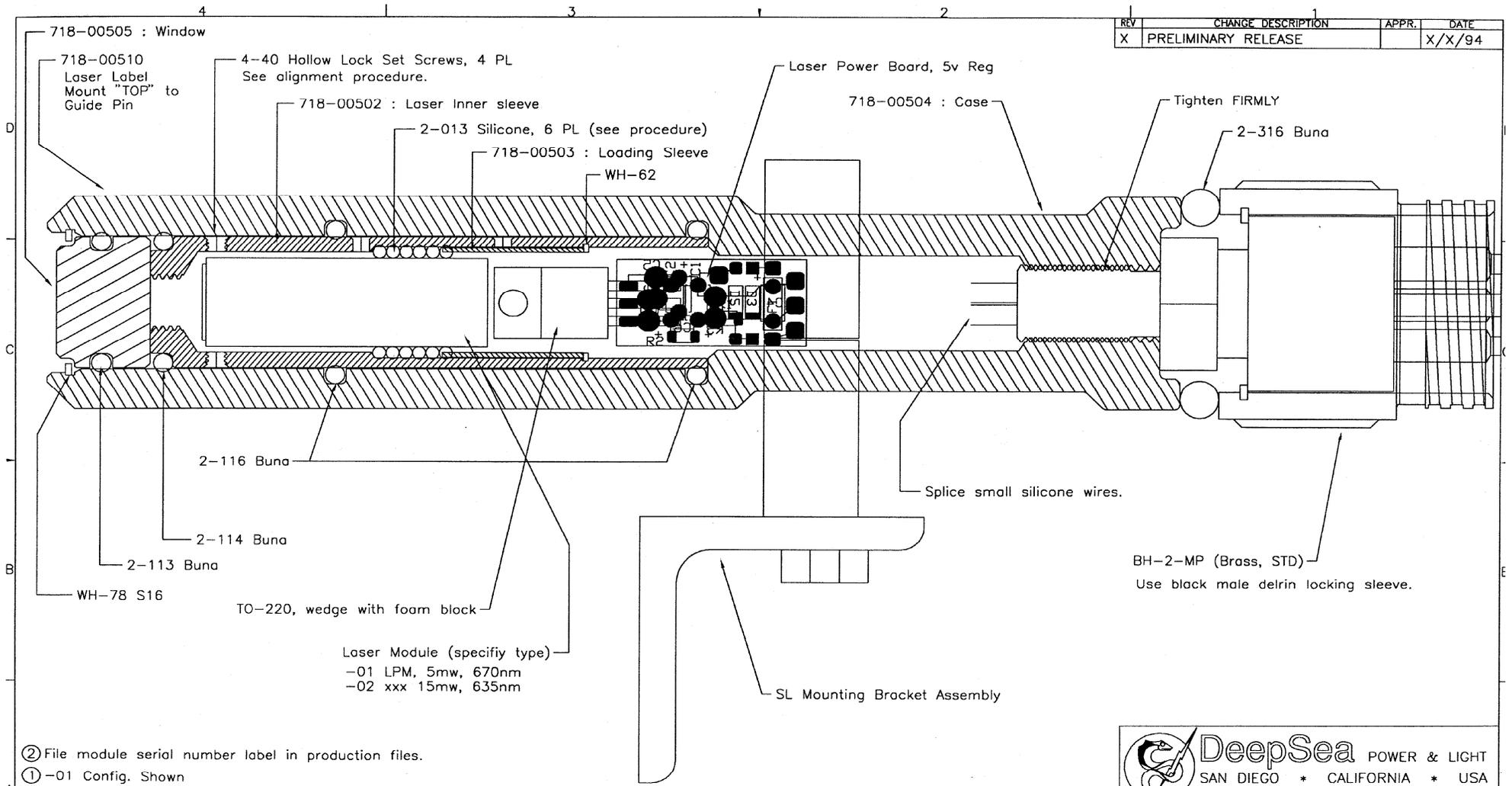
Spare Parts

Model Number	Part Number	Description
UBSC	774-000-020-0A	UBS mounting collar, small

DANGER

LASER RADIATION
AVOID DIRECT EXPOSURE TO BEAM

PEAK POWER <5 mW
WAVE LENGTH 532-635 nm
CLASS III-A LASER PRODUCT



REV	CHANGE DESCRIPTION	APPR.	DATE
X	PRELIMINARY RELEASE		X/X/94

- ② File module serial number label in production files.
- ① -01 Config. Shown
- Notes:

DeepSea POWER & LIGHT
 SAN DIEGO * CALIFORNIA * USA
 TEL(619)576-1261 FAX(619)576-0219

TOLERANCES UNLESS OTHERWISE SPECIFIED				MATERIAL	As Noted	ENG	M. Olsson	TITLE		Assembly	
.XX~	: ±.02 ALL DIMENSIONS ARE IN INCHES[MM]			SIZE	NA	DRAW	M. Olsson	SeaLaser 100 : SLZR-100			
.XX	: ±.01 REMOVE ALL BURRS			LENGTH	NA	CHECK		SIZE	DRAWING	718-00506	
.XXX LENGTHS	: ±.005 BREAK ALL SHARP EDGES			ANODIZING	See Note 'P'	DESIGN	Jan. 12, 1995	B	DRAWING	\DWGS\718\005\00506X01	
.XXX DIAMETERS	: ±.002 DIMENSIONS APPLY BEFORE PLATING			PLATING	See Note 'H'	DATE	Jan. 13, 1995		DSPL	CAGE CODE	ODEN2
HOLES	: ±.003 DO NOT SCALE DRAWING			POST		PROCESS			REV	X	
ANGULAR	: ±.5°			USED ON		CUSTOMER	NA	MASTER	DRAWING	\$718005.dwg	
FRACTIONAL	: ±1/64			APPLICATION		CONTRACT	NA	PLOT	CYCLE	#6	
	FINISH	64	FINISH	32	DASH	QTY	NEXT ASSEMBLY	SCALE	2=1	SHEET	1 OF 1
	ALL SURF		SEAL SURF		NO.	PER					