



SeaLaser® 100



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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: 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

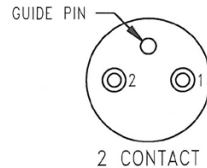
LASER

Type: Semi-conductor laser diode Class III-A
Beam Diameter: RED: elliptical, 1.8 mm x 0.5 mm; GREEN: circular, <2 mm Dia
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 +40°C (lasers produce maximum power output at mid-temperature range)

ELECTRICAL

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

Pin-out:



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

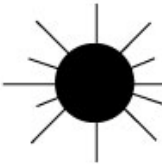
Model Number	Part Number	Description
IL2FS	706-005-003-0A-145	BH2MP mating connector with female locking sleeve on 18" (0.5m) whip
UBSL	774-000-018-0A	L-bracket, small

Spare Parts

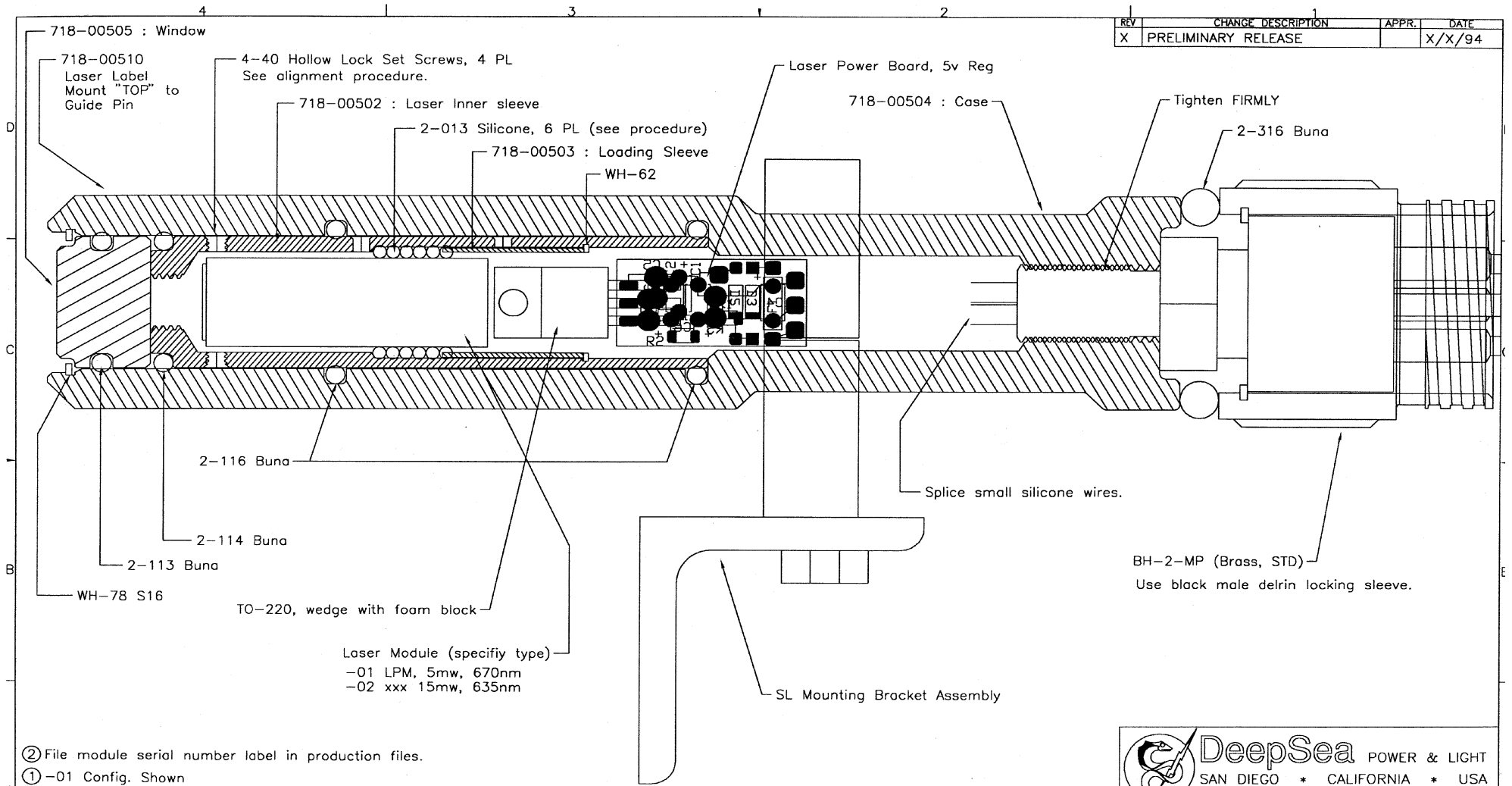
Model Number	Part Number	Description
UBSC	774-000-020-0A	UBS mounting collar, small

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:

TOLERANCES UNLESS OTHERWISE SPECIFIED	
.XX~	: ±.02 ALL DIMENSIONS ARE IN INCHES[MM]
.XX	: ±.01 REMOVE ALL BURRS
.XXX LENGTHS	: ±.005 BREAK ALL SHARP EDGES
.XXX DIAMETERS	: ±.002 DIMENSIONS APPLY BEFORE PLATING
HOLES	: ±.003 DO NOT SCALE DRAWING
ANGULAR	: ±.5° FINISH 64 SEAL SURF 32
FRACTIONAL	: ±1/64 ALL SURF

DASH NO.	QTY PER	NEXT ASSEMBLY	USED ON	APPLICATION
	1			

MATERIAL	As Noted
SIZE	NA
LENGTH	NA
ANODIZING	See Note 'P'
PLATING	See Note 'H'
POST PROCESS	See Note 'H'
CUSTOMER	NA

ENG	M. Olsson
DRAW	M. Olsson
CHECK	
DESIGN DATE	Jan. 12, 1995
LAST UPDATE	Jan. 13, 1995

TITLE	Assembly
Sealaser 100 : SLZR-100	
SIZE	B
DRAWING NO.	718-00506
DRAWING PATH	\\DWGS\718\005\00506X01
DSPL	ODEN2
CAGE CODE	
REV	X
MASTER DRAWING	\$718005.dwg
PLOT CYCLE #	6
SCALE	2=1
SHEET	1 OF 1