

Electronic Field Service Procedure, Smart Power Supply

USAGE: To be performed first when a loss of average laser power is detected. Mechanical Field Service Procedure to follow.

PURPOSE: To recover lost output power through temperature tuning of the Doubler, Tripler, and Diode.

TOOLS: Small flat screw driver, small Phillips screwdriver, Laser power meter.

STEP 1

Check Scan: (see figure 1)

Object: To ensure that there are no damaged areas of the crystals.

1. Remove two screws in the access panel on the Right side of the power supply. Panel door should flip down to expose test points. Test point functions are labeled on a sticker on the inside of the access panel. Locate the portion of the sticker that details the SCANNER CARD. The card will be mounted on top of the main power supply board.
2. At the Front Panel (see Figure 1), press the MENU button to advance through the display menus until SCANLO and SCANHI values are found. The value displayed on the left is the set limit and the value displayed on the right is the actual position of the scanner. Record values from the SCANLO and SCANHI menus before making adjustments.
3. Remove all attenuators from the laser head and place a power meter in the output beam. Measure and record output power.
4. Locate the button marked STEP/SLEW on the SCANNER CARD. Press and hold this button down for 10 seconds while monitoring power. A red light should turn on next to the button and the actual position value on the display should change.
5. After 10 seconds, release the STEP/SLEW button. A green light should turn on next to the button. If the power did not change by more than 10% in 10 seconds, continue to STEP 2. If the power changed by more than 10% in 10 seconds, press the STEP/SLEW button and watch power. When maximum power is observed, release the STEP/SLEW button and contact your local service representative for more detailed instructions.

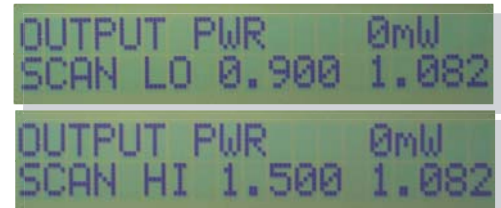


Figure 1



Front Panel

STEP 2

Tune Diode Temperature: (see figure 2)

Object: To get to point "C" on the curve for maximum power.

Note: The values shown in figure 2 are typical values. Lasers may vary.

1. Scroll through the display menus using the MENU button until the LD (laser diode temp) menu is found. The value on the left is the set point and the value on the right is the sense value.

2. Since you may be starting from either point "A" or point "B", make a small change (+0.20C) to LD using the UP/DOWN buttons on the front of the power supply.

Wait 1 minute for the temperature to stabilize and check power. If power remains constant (within 10% of starting value), then continue increasing LD temp in 0.20C increments (waiting 1 minute between changes) until power begins to drop and you reach point "B". If power has increased, you are near point "A" and should continue to increase LD temp in 0.20C increments until power reaches point "C".

If power decreases after the first adjustment, you are near point "B" and should begin decreasing LD temp in 0.20C increments until you reach point "C".

3. Make a final adjustment to set LD for maximum power at point "C".



OUTPUT PWR 0mW
LD 34.00°C 33.92°C

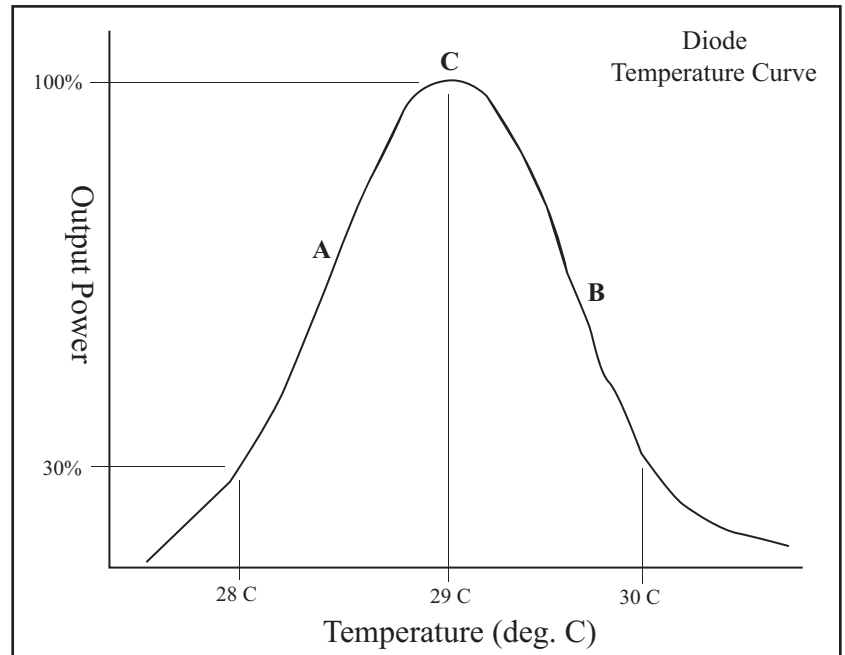


Figure 2

STEP 3

Tune Doubler Temperature: (see figure 3)

Object: To get to point "C" on the curve for maximum power.

Note: The values shown in figure 3 are typical values. Lasers may vary.

1. Scroll through the display menus using the MENU button until the X2 menu is found. The value on the left is the set point and the value on the right is the sense point.

2. Since you may be starting from either point "A" or point "B", make a small change (+0.20C) to X2 using the UP/DOWN arrows.

Wait 30 seconds for the temperature to stabilize and check power. If power has increased, you are at point "A" and should continue to increase X2 in 0.20C increments (waiting 30 seconds between changes) until power reaches a maximum and then begins to drop.

If power decreases after the first adjustment, you are at point "B" and should begin decreasing X2 in 0.20C increments (waiting 30 seconds between changes) until power reaches a maximum and then begins to drop again.

3. Make a final adjustment to set X2 for maximum power at point "C".



OUTPUT PWR 0mW
X2 22.00°C 21.93°C

STEP 4

Tune Tripler Temperature: (see figure 3)

Object: To get to point "C" on the curve for maximum power.

Note: The values shown in figure 3 are typical values. Lasers may vary.

1. Scroll through the display menus using the MENU button until the X3 menu is found. The value on the left is the set point and the value on the right is the sense point.

2. Since you may be starting from either point "A" or point "B", make a small change (+0.20C) to X3 using the UP/DOWN arrows.

Wait 30 seconds for the temperature to stabilize and check power. If power has increased, you are at point "A" and should continue to increase X3 in 0.20C increments (waiting 30 seconds between changes) until power reaches a maximum and then begins to drop.

If power decreases after the first adjustment, you are at point "B" and should begin decreasing X3 in 0.20C increments (waiting 30 seconds between changes) until power reaches a maximum and then begins to drop again.

3. Make a final adjustment to set X3 for maximum power at point "C".

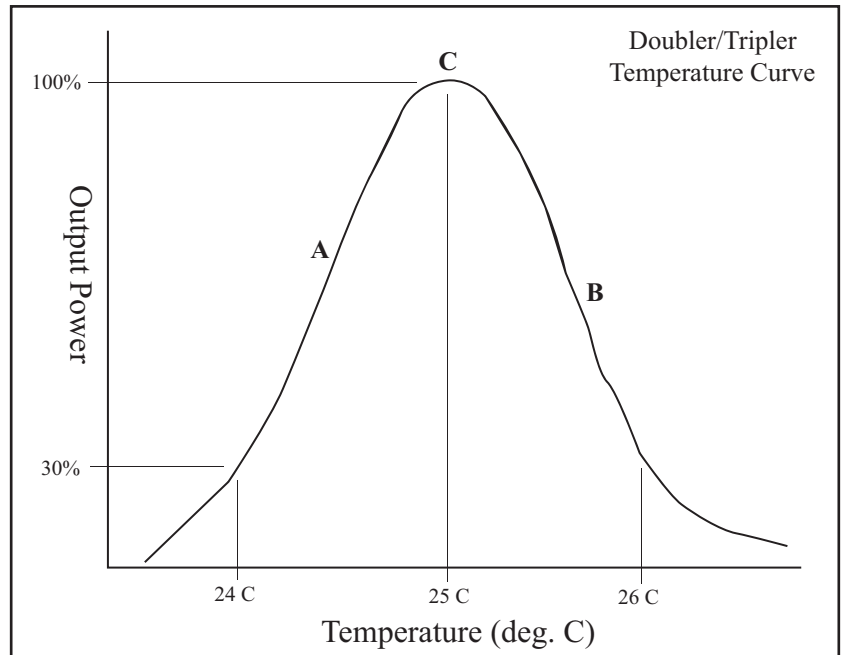


Figure 3

STEP 5

Store New Set Points to Memory

Object: To update the laser memory with newly adjusted set points.

1. After all values in the previous steps have been set, press and hold the MENU button for 30 seconds until the screen displays *****STORED*****. This will record the new set values to memory and can be performed as often as is necessary.

2. Release the MENU button.

NOTE: Be sure to wait at least 15 seconds before turning off the power supply after a store function.



2525 Walsh Ave.
Santa Clara, CA 95051
Phone: (408) 988-4300
Fax: (408) 988-4305
Email: Sales@DPSS-Lasers.com
TechSupport@DPSS-Lasers.com
Web: www.DPSS-Lasers.com

DPSS Lasers Inc. is committed to providing premium quality service.

All new laser systems come with a limited warranty. For full details, please refer to the Support page at www.DPSS-Lasers.com, or contact your local Sales and Service Representative