

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, and Tripler.

TOOLS: Laser power meter.

Use the buttons and menus on the front panel (see Figure 1) of the Smart Power Supply to access and adjust the following menu items. More information about the front panel operation, menus, and acceptable settings can be found in the User Manual for your laser system.

Figure 1



Front Panel

STEP 1

Warm-up:

CAUTION: THIS WILL CAUSE THE LASER TO EMIT HIGH POWER UV PULSES. TAKE APPROPRIATE SAFETY MEASURES (see User Manual for more information) WHEN WORKING AROUND HIGH POWER LASER EMISSIONS.

1. Place your power meter sensor in the beam path as close to the laser head (ahead of other optics) as practically possible.
2. Turn the key switch ON.
3. After the boot-up sequence, press the EMISSION ON button.
3. Allow the laser to warm up for at least 30 minutes.
5. Press the Q-SW ENABLE button.
6. Measure and make a note of your starting power.

STEP 2

Tune Doubler 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 centered around 25 C. Lasers may vary. Some lasers may have values centered around 50 C.

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 were 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 were 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

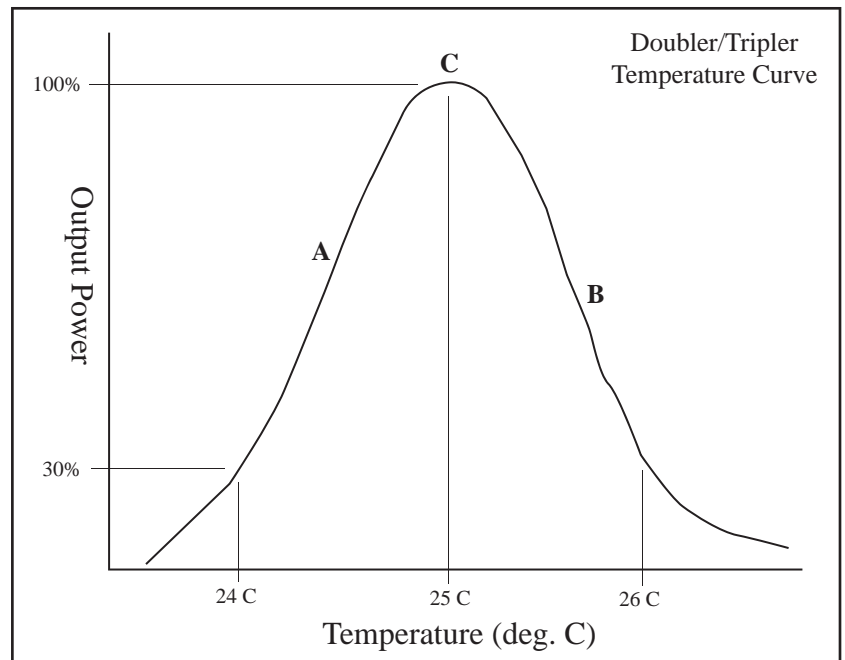


Figure 2

STEP 3

Tune Tripler Temperature: (see Figure 2)

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

Note: Note: The values shown in figure 2 are typical values centered around 25 C. Lasers may vary. Some lasers may have values centered around 50 C.

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 were 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 were 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".



OUTPUT PWR 0mW
X3 26.25°C 26.20°C

STEP 4

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.



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