MGentleLASE *HVPS Calibration Procedure*


CANDELA

HVPS CALIBRATION

CAUTION !!

During this procedure it is possible that the laser may fire, emitting laser radiation. Therefore SAFETY EYEWEAR must be worn. The eyewear must have an optical density of at least 5.8 at 745 - 765 nm.

The high voltages present in this system are LETHAL. This procedure must be performed only by those technicians who are familiar with the precautions required when working with high voltage systems, and those who have been trained on the MGL system and its particular hazards.

WARNING!!!!!

BEFORE WORKING WITHIN THE HV SECTION, ALWAYS DUMP THE HIGH VOLTAGE BY SELECTING CHRG DISABLE FROM THE TOGGLE SCREEN, PULSING ONCE, THEN ENTERING STANDBY. THERE WILL STILL BE ABOUT 150 V ON THE FLASHLAMP CATHODE, SO THIS SHOULD BE DISCHARGED WITH THE DISCHARGE STICK. ALWAYS MEASURE THE VOLTAGE AT THE FLASHLAMP CATHODE BEFORE WORKING ON THE LASER RAIL.

WARNING – LASER LIGHT!!!

DURING THE HVPS TESTING, SOME LASER LIGHT WILL EXIT THE FIBER RECEPTACLE. THEREFORE, BE SURE TO PUT A BEAM BLOCK AT THE OUTPUT OF THE RECEPTACLE.

1. Remove the laser box cover.

2. Checking the bias voltage: IN STANDBY state. Connect the high voltage DVM probe to measure the voltage on the laser rail mid way at the terminal where the two flashlamp wires are connected together. Connect the high voltage probe ground lead to chassis ground. Verify the voltage is 2200 VDC to 2600 VDC.

3. Checking the trigger pulse: Go to READY state. Set the high voltage to 0 volts using the maintenance mode ‘HV Ctrl’ Screen. Pulse the laser and verify that a small flash occurs at each flashlamp indicating the presence of a trigger pulse. Do not proceed to the next step unless proper triggering of the lamps is achieved. Go to STANDBY state and replace the laser box cover. In toggle screen press “Shttr Ctrl” to close beam shutter. Verify “Shttr State” is highlighted.

4. Install the 1000:1 DVM high voltage probe on one terminal of the PFN capacitor. Secure the probe in position and connect its ground lead to chassis.

5. On the HV CTRL screen, verify that the Charge Enabled button is highlighted. Highlighted is the enabled condition. Adjust the high voltage setting for Voltage = 2000V.

6. Go to Ready. Verify that the high voltage charges up. Adjust potentiometer R147 on the CPU I/O PCB so that the DVM on capacitor reads 2.000 VDC (2000 V) ± 0.002VDC.

7. Adjust potentiometer R131 on the CPU I/O PCB so that the high voltage sample on the maintenance screen reads 2000 V ± 5 V.

8. Set the high voltage to 1000 volts using the display panel. **DO NOT PULSE THE LASER.** Allow the voltage to bleed down to 1200 V then pulse once. Verify the actual high voltage on the DVM is 1.000 VDC (1000 V) ± 6VDC.

9. Verify that the high voltage sample on the maintenance screen is 1000 volts ± 9 volts.

10. Go to STANDBY. Press the Charge enabled button to disable the charge (not highlighted) and go to READY. Pulse the laser to discharge the remaining voltage. Use the discharge stick to completely discharge the three PFN capacitors. Go to STANDBY. Remove all probes from the high voltage section and replace the plastic shield.

11. Go to Standby state. Turn the laser off. Replace the laser box cover.


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