

MGentleLASE

Head Detector Calibration Procedure



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 NEAR THE HEAD, ALWAYS DUMP THE 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.

NOTE: If the OPHIR NOVA display is used, be sure the wavelength is set to YAG or <800, depending on the meter head being used.

1. Remove the Delivery System.
2. Remove the laser rail dust box.
3. Remove the shutter and mount with one screw above fiber focusing assy. In dust cover mounting hole so it can safely actuate.
4. Remove the fiber receptacle.
5. Set up the Energy Meter Bracket (7122-00-3370). Place the Energy meter in place.
6. Go to the HV CTRL screen. Put on eyewear and enter READY.
7. Type in 1200 V and pulse the laser a few times, verifying that the beam is centered on the meter by centering the aiming beam on meter face.
8. Using a DVM, ensure that you measure 0.0v, \pm .5mv between TP 5 & A GND. Adjust if necessary. REMOVE THE DVM. (Necessary with new CPU/IO PCB only)
9. Adjust the voltage until the OPHIR reads 38 – 42 Joules. Adjust the head detector high POT on the CPU I/O PCB, R35, until the head energy displayed on the laser display (MM Mode) equals the OPHIR energy within 0.5 J.

10. Adjust the voltage for 9.0 – 9.5 Joules. Adjust the head detector low POT on the CPU I/O PCB, R56, until the head energy displayed on the laser display (MM Mode) equals the OPHIR energy within 0.15 J.
11. Repeat Steps 8 and 9 until both conditions are met.
12. Adjust the voltages until the OPHIR meter reads 59 - 61 Joules. Verify that the head detector reading agrees with the OPHIR reading within ± 1.5 J. If it doesn't, adjust R35. Repeat Steps 8 to 11 until all conditions are met.
13. Replace the fiber receptacle.
14. Replace the shutter and mount.
15. Replace the laser rail dust box.
16. Replace Delivery System.
17. Remove the energy meter and the Energy Meter Calibration Kit.