

10 Hz Laser Shutdown Procedure – SHL 014A

IMPORTANT: Always block the beam going into the chamber/setup before proceeding with the shutdown procedure!

Lunchbreak Shutdown:

Step 1: If on, turn off the Multipass Amplifier: Quanta-Ray PRO 350 laser.

- a. Reduce the amplifier energy by slowly turning the “AMP” dial down to “START”.
- b. Reduce the oscillator energy by slowly turning the “OSC” dial down to “START”.
- c. **Wait** 2 minutes, push the momentary “STOP” rocker switch. The enable “ON” light will turn off. The “OSC” and “AMP” light will turn off. The “OFF” light on “STOP” will turn **ON**.
- d. Turn off the key switch on the power supply (set it to “0”). All lights should be off on the controller.
- e. DO NOT turn off the circuit breaker.

Step 1: Turn down the high voltage on the “Lasermetrics: Model 5046” to 0 using the “HV ADJUST” knob. Leave the box ON.

Step 2: Turn down the voltage on the “Surelite” (Regen).

- a. Using the down arrow “↓”, turn down the voltage on the Regen to about 1.05 kV. [Make sure the display is showing the voltage before trying to adjust it; hit the “SELECT” button until you see the voltage (red light will turn on next to kV), then the down arrow.]
- b. Shutter the Regen by hitting the “SHUTTER” button (the red LED on the button should go off).

You are done! Make sure you put up all the panels before you leave! Enjoy your lunch! ☺

Weekday Shutdown:

Step 1: Shut down the Multipass Amplifier: Quanta-Ray PRO 350 laser.

- f. Reduce the amplifier energy by slowly turning the “AMP” dial down to “START”.
- g. Reduce the oscillator energy by slowly turning the “OSC” dial down to “START”.
- h. **Wait** 2 minutes, push the momentary “STOP” rocker switch. The enable “ON” light will turn off. The “OSC” and “AMP” light will turn off. The “OFF” light on “STOP” will turn **ON**.
- i. Turn off the key switch on the power supply (set it to “0”). All lights should be off on the controller.
- j. DO NOT turn off the circuit breaker.

Step 2: Shut down the Regenerative (Regen) pump later (“Surelite”). NOTE: Block the beam leaving the Regen first!

- a. Depress the “SHUTTER” button (the red LED on the button should go off) on the power supply.
- b. Using the down arrow “↓”, turn down the voltage on the Regen to about 1.05 kV. [Make sure the display is showing the voltage before trying to adjust it; hit the “SELECT” button until you see the voltage (red light will turn on next to kV), then the down arrow.]
- c. Depress the “START/STOP” button (the red LED on the button should go off).
- d. **Wait 5 minutes!** {Proceed to Step 3 in the meantime}
- e. Turn off the key switch on the power supply (switch it to “STANDBY”). The fans should stop. **Wait** ~10 seconds.
- f. Flip the red “AC POWER” switch to the “OFF” position (toggle downward).

Step 3: Shut down the “Lasermetrics: Model 5046” High Voltage Power Supply.

- a. Reduce the high voltage on the power supply to 0 using the “HV ADJUST” knob.
- b. **Wait** ~10 seconds.
- c. Turn off “AC ON” (toggle downward) on the power supply (green light should go off).
- d. Depress “ON/OFF” power button on both “Four Channel Digital Delay/Pulse Generator” timing boxes.

Step 4: Shut down the Oscillator. NOTE: Block the beam leaving the oscillator first.

- a. Press the “POWER LEVEL 2” button (light should go off). **Wait** ~10 seconds.
- b. Press the “SHUTTER OPEN” button (light should go off). **Wait** until the current stabilizes (~1 minute) to around 14.2 A.
- c. Turn the key switch to the “STANDBY” position.
- d. Depress the “RUN/STOP” button once on the BNC timing generator box. DO NOT TURN THIS UNIT OFF!
- e. Turn off the oscilloscope.
- f. **TURN OFF THE EXTERNAL COOLING WATER SUPPLY! DON’T FORGET THIS!!**

If it has been 5 minutes, return to the skipped steps in Steps 1 and 2 and complete those.

You are done! Make sure you put up all the panels before you leave! Have a nice day! 😊

Weekend Shutdown:

Follow all of the steps for the Weekday Shutdown and...

Step 5: Power off the Oscillator. On the back of the Oscillator power supply, toggle off the power supply under “MAINS” by switching it from “I” to “O”.

You are done! Make sure you put up all the panels before you leave! Have a nice weekend! 😊