UCONN | UNIVERSITY OF CONNECTICUT

ENVIRONMENTAL HEALTH AND SAFETY

LASER STANDARD OPERATING PROCEDURE

The University of Connecticut Laser Safety Program

Please complete the following form to request the use of a Class 3b or Class 4 laser. You must submit completed forms for review via email to amy.c@uconn.edu or print and send a hard copy to RADIATION SAFETY, 3102 Horsebarn Hill Rd., U-4097, Storrs, CT 06269-4097. Please keep a copy for your records. Upon completion of review, a final signed copy will be returned to the applicant.

1. PRIMARY LASER RESEARCHER (PLR): **DEPARTMENT:**

Campus Location:

2. LASER SYSTEM DATA:

A. LASER 1 DATA:

Type: Wavelength(s): Classification:

Manufacturer: Model: Serial #:

Location Building: Room: UConn Laser #:

Beam Diameter: Beam Divergence:

☐ Pulsed:

Q-Switched: Max. Energy per pulse:

Pulse Duration: Repetition Rate:

☐ Continuous Wave:

Max. Power:

B. LASER 2 DATA:

Type: Wavelength(s): Classification:

Manufacturer: Model: Serial #:

Location Building: Room: UConn Laser #:

Beam Diameter: Beam Divergence:

☐ Pulsed:

Q-Switched: Max. Energy per pulse:

Pulse Duration: Repetition Rate:

☐ Continuous Wave:

Max. Power:

3. LASER SAFETY CONTACT INFORMATION: ***Emergencies: 911***

PLR Campus Phone: PLR Alternative Phone:

Department of Environmental Health & Safety Laser Safety Officer (LSO): Amy Courchesne
LSO Campus Phone: 860-486-3613

Notify the Laboratory PLR and University LSO of all laser-related injuries.

4. LASER SAFETY PROGRAM:

Reference the University of Connecticut Laser Safety Manual for the following:

- Responsibilities of the Laser Safety Committee, Laser Safety Officer, Primary Laser Researcher (PLR), and Laser Users.
- Training requirements.
- Class 3b and Class 4 laser registration and disposal/transfer requirements.
- Medical screening (eye examination).
- Personal Protective Equipment (PPE), including protective eyewear.
- Standard Operating Procedures (SOPs).
- Signage and labeling requirements.
- Non-radiation hazards.

5. LASER APPLICATION SUMMARY (complete a short summary of intended laser use)**:**

6. HAZARDS PRESENT:

Check off applicable hazards below. Please comment on **each hazard** present in the space provided. Describe the hazard and how it will be addressed, if applicable. **If additional space is required please continue on the additional sheet provided in Section 10.**

Yes ☐ No ☐ Open/accessible laser beam.

_____

Yes ☐ No ☐ Laser operations at eye level (standing or sitting).

_____

Yes ☐ No ☐ Ultraviolet radiation/blue light exposure.

_____

Yes ☐ No ☐ Non-beam related reflective surfaces (e.g. computer monitors, etc.) in vicinity of laser/laser beam(s).

_____

Yes ☐ No ☐ Stray beam(s)

_____

Yes ☐ No ☐ Exposed high voltage power supplies.

_____

Yes ☐ No ☐ Exposed capacitors.

_____

Yes ☐ No ☐ Collecting optics (e.g. microscopes, telescopes, etc.)

_____

Yes ☐ No ☐ Fumes/vapors.

_____

Yes ☐ No ☐ Plasma radiation.

_____

Yes ☐ No ☐ Compressed gases.

_____

Yes ☐ No ☐ Hazardous chemicals.

_____

Yes ☐ No ☐ Hazardous waste.

_____

Yes ☐ No ☐ Fire/Combustible Materials.

_____

Yes ☐ No ☐ Poor housekeeping.

_____

Yes ☐ No ☐ Other:

_____

7. CONTROLS:

Please check the controls present. If No or N/A is selected for a particular control, please provide additional detail or explanation in the space provided. **If additional space is required please continue on the additional sheet provided in Section 10.**

Yes ☐ No ☐ N/A ☐ Entryway controls established (Engineered or Administrative).

_____

Yes ☐ No ☐ N/A ☐ Control Area designated and appropriately posted.

_____

Yes ☐ No ☐ N/A ☐ Nominal Hazard Zone (NHZ) established.

_____

Yes ☐ No ☐ N/A ☐ Laser master switch (key or computer code). Key removed from laser system when not in use.

_____

Yes ☐ No ☐ N/A ☐ Laser beam enclosure utilized.

_____

Yes ☐ No ☐ N/A ☐ Laser beam enclosure interlocks operational.

_____

Yes ☐ No ☐ N/A ☐ Laser housing cover interlocks operational.

_____

Yes ☐ No ☐ N/A ☐ Appropriate beam attenuators (stops/dumps) utilized.

_____

Yes ☐ No ☐ N/A ☐ Laser secured to base.

_____

Yes ☐ No ☐ N/A ☐ Laser associated equipment secured to base.

_____

Yes ☐ No ☐ N/A ☐ Protective barriers (e.g. curtains, partitions).

_____

Yes ☐ No ☐ N/A ☐ UConn Laser Safety Manual available.

_____

Yes ☐ No ☐ N/A ☐ Alignment Procedure Established

_____

Yes ☐ No ☐ N/A ☐ Researcher conducted laser maintenance (routine adjustments etc. not to include servicing).

_____

Yes ☐ No ☐ N/A ☐ Emergency off/stop (i.e. panic button) identified.

_____

Yes ☐ No ☐ N/A ☐ Rapid egress and emergency access satisfactory.

_____

Yes ☐ No ☐ N/A ☐ Personal Protective Equipment (PPE)

_____

Yes ☐ No ☐ N/A ☐ Non-beam hazards addressed satisfactorily.

_____

Yes ☐ No ☐ N/A ☐ Training requirements completed for all lab personnel.

_____

8. EYEWEAR CRITERIA: (Discard damaged or unfit eyewear!)

Please check off the appropriate eyewear criteria.

Yes ☐ No ☐ Sufficient pairs available.

_____

Yes ☐ No ☐ Eyewear specific to laser wavelength(s).

_____

Yes ☐ No ☐ Optical Density (OD) appropriate for all ranges of laser energy/power operations.

_____

Yes ☐ No ☐ Proper fit.

_____

Yes ☐ No ☐ Free of damage and or excessive scratches.

_____

LASER EYEWEAR USE CHART

For this laser:			**Wear this eyewear:**			
Type of Laser	Wavelength (nm)	Notes	Designation/ Manufacturer	Wavelength attenuated (nm)	Optical Density (OD)	Notes

9. OPERATING PROCEDURES:

If additional space is required please continue on the additional sheet provided in Section 10.

- Initial preparation of lab environment and laser for normal laser operation (e.g. key position, interlock activated, outside warning signal on, identification of personnel, operational log, etc.):

- Alignment procedure:

- Target area preparation:

- Operational procedure (power settings, Q-switched mode, pulse rate, other):

- Shutdown procedure:

- Special procedures (e.g. servicing, maintenance, safety tests, interlock bypass, etc.):

- Emergency shutdown procedure:

- Hazardous waste disposal procedures (if applicable):

10. ADDITIONAL SHEET

Please use this sheet only if space provided above does not allow for a complete response.

11. LABORATORY PERSONNEL LISTING:

Laser Users:	**Training Complete**	**Laser Non-users:**	**Training Complete**
1. _____	☐	**1.** _____	☐
2. _____	☐	**2.** _____	☐
3. _____	☐	**3.** _____	☐
4. _____	☐	**4.** _____	☐
5. _____	☐	**5.** _____	☐
6. _____	☐	**6.** _____	☐
7. _____	☐	**7.** _____	☐
8. _____	☐	**8.** _____	☐
9. _____	☐	**9.** _____	☐
10. _____	☐	**10.** _____	☐
11. _____	☐	**11.** _____	☐
12. _____	☐	**12.** _____	☐
13. _____	☐	**13.** _____	☐
14. _____	☐	**14.** _____	☐
15. _____	☐	**15.** _____	☐

12. LASER USER SOP REVIEW:

I have read this Standard Operating Procedure, understand the contents, and will utilize this procedure each time I use this laser or laser system.

Name (print)	Signature	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

- **This SOP shall be:**
  - **Read and understood by <u>laser users</u> prior to their initial use of the listed laser.**
  - **Reviewed by all <u>laser users</u> following any modifications to the laser or laser system that affects operational parameters.**
  - **Reviewed annually by all <u>laser users</u>.**
- **This SOP must be readily accessible and available for reference by laser users.**
- **Modifications to this SOP must be reviewed and approved by both the PLR and the LSO.**

PLR REVIEW:

Date:

Name:

Signature:

LSO REVIEW:

Date and signature below documents Radiation Safety Office review with no exception taken to the information provided.

Date:

Name: Amy Courchesne

Signature: