**Class 3B Laser Standard Operating Procedure**

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| --- | --- |
| Principal Investigator: | Room Number: |
| Department: | Revision#: |
| Instrument(s): | Date: |

**This procedure shall be read and signed by all persons who use lasers listed in this SOP.**

**Yellow Highlights indicate areas that must be filled out or modified by the PI.**

1. **Laser Safety Contacts**

EHS Department 713-743-5858

[ehs@uh.edu](mailto:ehs@uh.edu)

1. **Medical Emergencies**

Call 911 (from campus phone line) or 713-743-3333 (from cell phone)

Notify the Radiation/Laser Safety Officer of all laser related injuries and near-misses as soon as possible.

1. **Laser Purpose (brief description of intended laser research purposes)**

Equipment:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Manufacturer | Model | Serial# | Type | Class | Max Output | Wavelength |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

1. **Scope**
2. This document provides safety guidance for laser operator(s) and spectator(s) within the laser controlled area.
3. Procedures documented herein are in accordance with applicable regulatory/guidance documents impacting the safe operation of the lasers in laboratories.
4. Class 3B Laser can cause severe and permanent injuries to the eye, and safety precautions must be taken to manage this risk for the operator and any bystanders.
5. **Responsibilities**
6. The Principal Investigator:

* Ensure that all laser users receive adequate and appropriate laser safety training prior to operating the laser(s). This training must include a review of the UH Laser Safety Manual, this laser safety training document, and hazard-specific, hands-on training with the device.
* Ensure that all safety procedures are followed.
* Determine the “Nominal Hazard Zone” of the laser. Safety devices such as beam stops, wall blocks, interlocks, etc. must be used whenever possible to reduce the size of this zone.
* Supervise or otherwise provide for adequate supervision of users, visitors, and service personnel as appropriate, and provide adequate security to prevent unauthorized use of the device
* Correct and control all laser equipment hazards as appropriate in a timely manner.

1. The Laser User(s) must:

* Be authorized and trained appropriately to operate potentially hazardous laser.
* Wear properly rated goggles if the person is exposed to a hazardous beam or its reflection.
* Adhere to all appropriate rules and procedures. Common sense and prudent practices must be considered all times when operating laser.
* Immediately report accidents or potentially dangerous situations to the supervisor and/or safety personnel.
* Log each use of the laser in a logbook.

1. The Laser Safety Officer (LSO) is responsible for implementing the UH laser safety policies. Specifically, the LSO will be responsible for periodic safety review of laser facilities, performing basic laser safety training, evaluating protecting equipment, and initiating corrective measures as necessary.
2. **Training**
3. The Principal Investigator and Authorized Users must complete the UH Laser Safety training, and annual refresher training thereafter.
4. Authorized Users shall also receive hands-on training from the Principal Investigator or designee with respect to safe operation of the laser.
5. **Protective Equipment**
6. Protective eyewear which is appropriate for the power and wavelengths of the lasers in use must be worn by all operators while the laser is in operation if the laser is not completely enclosed. Eyewear must be worn during alignments.
7. Eyewear wavelength(s) \_\_\_\_\_\_\_\_\_\_\_

Eyewear minimum OD \_\_\_\_\_\_\_\_\_\_\_ (ask LSO for help with minimum OD calculation)

1. A lab coat should be worn by personnel if laser operation involves the emission of UV radiation.
2. **Laser Entryway Controls**
3. Doors must be closed and locked during laser operations
4. Doors must be properly posted and the warning light (if applicable) energized during operations.
5. Door windows and labs windows must be covered to prevent the escape of a laser beam.
6. **Engineering/Safety Controls** **(list any safety measures such as enclosures, interlocks, etc. present in the laser setup)**
7. **Beam Alignment and Maintenance**
8. Beam alignment and/or laser machine preventative maintenance may only be performed by designated Authorized Users wearing protective eyewear appropriate to the wavelength in use.
9. Laser repairs and/or removal of a laser unit’s protective housing may only be performed by qualified personnel. Notify the LSO if a vendor or contractor is coming to service the laser, so they can verify that they are licensed by the State.
10. Contract personnel should have the access to the laser lab only while escorted by a qualified laser operator. The contractor is required to understand all the hazards associated with lab and abide by the same safety procedures as laser operators while working on the beam alignments and maintenance.
11. **Operating Procedure**

**Start Up:**

**Shut down:**

**Sample change/beam path modification/other common or potentially hazardous operations:**

Additional information available at UH Laser Safety Manual at <https://uh.edu/ehs/manuals/files/laser-safety-manual.pdf>