WKU Environmental Health & Safety

Laser Safety Checklist

Building: _____ Room Number: _____ Date: _____

Laser Supervisor: _____ Phone: _____

Laser Classification: Select

General Laser Safety

These general precautions are applicable to all class 1, class 2, class 3, and class 4 laser systems. Class 1, 2, or 3a laser systems that enclose higher class lasers must comply with the requirement of the higher class laser during alignment, service procedures, and other operations that permit beam access. Fabricated or modified laser systems shall be evaluated by the Laser Safety Officer and, if necessary, reclassified. Areas in compliance with current standards should have all applicable items answered as "yes."

Administrative and Procedural Controls			
1. Is the laser system classified appropriately?	○ Yes	○ No	○ N/A
2. Is the laser system included in the WKU inventory?	○ Yes	○ No	○ N/A
3. Are the class designation and warning labels prominently affixed to the laser housing?	○ Yes	○ No	○ N/A
4. Do the beam alignment procedures maintain exposures below MPE?	○ Yes	○ No	○ N/A
5. Is the beam directed away from doors and windows?	○ Yes	○ No	○ N/A
6. Has the beam path been leveled to avoid normal sitting or standing eye position?	○ Yes	○ No	○ N/A
Engineering Controls and Protective Equipment			
7. Is a protective housing or enclosure present and in good condition?	○ Yes	○ No	○ N/A
8. If the laser is operated without a protective housing, has a hazard analysis been conducted and the appropriate controls been implemented?	○ Yes	○ No	○ N/A
9. Are protective housings enclosing class 3b or 4 lasers equipped with interlocks?	○ Yes	○ No	○ N/A
10. Are the service access panels for any embedded 3b or 4 lasers equipped with an interlock, key access, or similar barrier?	○ Yes	○ No	○ N/A
11. Do the viewing windows or portals attenuate radiation to below MPE?	○ Yes	○ No	○ N/A
12. Can viewing windows or portals withstand direct and diffusely scattered beams?	○ Yes	○ No	○ N/A
13. Do the collecting optics maintain exposures below MPE?	○ Yes	○ No	○ N/A
14. Is a temporary laser controlled area established when MPE is exceeded?	○ Yes	○ No	○ N/A
Non-Beam Hazards			
15. Is all high voltage equipment properly grounded?	○ Yes	○ No	○ N/A
16. Is all high voltage equipment located away from wet surfaces or water sources?	○ Yes	○ No	○ N/A
17. Are high voltage warning labels in place?	○ Yes	○ No	○ N/A
18. Are compressed gases properly secured?	○ Yes	○ No	○ N/A
19. Are flammable and oxidizing materials stored away from the laser area?	○ Yes	○ No	○ N/A
20. Are hazardous chemicals stored away from laser area and NOT used?	○ Yes	○ No	○ N/A

Class 3b and 4 Lasers

Additional precautions for class 3b or 4 laser systems.

Administrative and Procedural Controls			
1. Has a Laser Safety Officer (LSO) been designated?	◯ Yes	◯ No	◯ N/A
2. Is the LSO empowered with decision making and enforcement authority?	◯ Yes	◯ No	◯ N/A
3. Has a Nominal Hazard Zone been established and demarcated for unenclosed systems?	◯ Yes	◯ No	◯ N/A
4. Have warning signs and labels been placed at the entrance(s) to the nominal hazard zone?	◯ Yes	◯ No	◯ N/A
5. Are only authorized laser users permitted to operate lasers?	◯ Yes	◯ No	◯ N/A
6. Are education and training provided to all authorized laser users and documented?	◯ Yes	◯ No	◯ N/A
7. Has a laser controlled area been established?	◯ Yes	◯ No	◯ N/A
8. Have medical surveillance procedures been implemented for both incidental and laser personnel?	◯ Yes	◯ No	◯ N/A
Engineering Controls and Protective Equipment			
9. Is the service access equipped with an interlock, key access, or similar barrier?	◯ Yes	◯ No	◯ N/A
10. Are skin protection and protective eyewear used for open-beam UV lasers?	◯ Yes	◯ No	◯ N/A
11. Is skin protection used when UV exposures exceed MPE?	◯ Yes	◯ No	◯ N/A
12. Are barriers, screens, and curtains flame resistant?	◯ Yes	◯ No	◯ N/A
13. Do barriers, screens, and curtains avoid release of toxic fumes following laser exposure?	◯ Yes	◯ No	◯ N/A

Class 4 Lasers

In addition to the requirements for lower class systems, class 4 laser systems must also meet the following:

Administrative and Procedural Controls			
1. Is the laser area free from polished or reflective surfaces?	◯ Yes	◯ No	◯ N/A
2. Is an activation warning system used during activation or startup?	◯ Yes	◯ No	◯ N/A
3. Are written SOPs for laser use and maintenance operations (including beam alignment) available?	◯ Yes	◯ No	◯ N/A
4. Are spectators only permitted with supervisory approval, appropriate training, and protective measures in place?	◯ Yes	◯ No	◯ N/A
Engineering Controls and Protective Equipment			
5. Is a master switch/key control available?	◯ Yes	◯ No	◯ N/A
6. Is a remote interlock connected an emergency disconnect/interlock?	◯ Yes	◯ No	◯ N/A
7. Is an “emergency stop” button available for emergency deactivation?	◯ Yes	◯ No	◯ N/A
8. Is laser protective eye wear available and in good condition?	◯ Yes	◯ No	◯ N/A
9. Is protective eye wear of appropriate optical density for the laser system?	◯ Yes	◯ No	◯ N/A
10. Is the protective clothing made of flame resistant materials?	◯ Yes	◯ No	◯ N/A
11. Is there a permanently attached beam stop or attenuator?	◯ Yes	◯ No	◯ N/A
12. Have control measures (e.g., isolation, local ventilation, PPE) been implemented for the vaporization of target materials and other laser generated air contamination?	◯ Yes	◯ No	◯ N/A