Laser Hazard Assessment

Assessment date: _____ Laser registration #: _____

Performed by: _____ Lab contact name: _____

A. General assessment

☐ All lasers registered with Radiation Safety Office (inventory current). ☐ All laser systems are tag with RSO Laser #.

B. Laser posting, labeling and security measures

[1] Controlled area warning sign properly posted. ☐Yes ☐No ☐N/A Comments _____

[2] Area warning sign (audible/visible). ☐Yes ☐No ☐N/A Comments _____

[3] Access control (keycard, key, pin pad, etc.) ☐Yes ☐No ☐N/A Comments _____

[4] Interlock system (defeatable/non-defeatable). ☐Yes ☐No ☐N/A Comments _____

[5] Laser warning label on laser system and aperture. ☐Yes ☐No ☐N/A Comments _____

C. Laser System Safety Controls

[1] Key control provided with master switch. ☐Yes ☐No ☐N/A Comments _____

[2] Protective housing. ☐Yes ☐No ☐N/A Comments _____

[3] Laser activation indicator on device. ☐Yes ☐No ☐N/A Comments _____

[4] Beam shutter present. ☐Yes ☐No ☐N/A Comments _____

D. Engineering Safety Controls

[1] Laser secured to table. ☐Yes ☐No ☐N/A Comments _____

[2] Optics table grounded. ☐Yes ☐No ☐N/A Comments _____

[3] Viewing windows and diffuse display screen. ☐Yes ☐No ☐N/A Comments _____

[4] Laser protective barriers and curtains available. ☐Yes ☐No ☐N/A Comments _____

[5] Laser beam path:-

a) Fully open beam ☐Yes ☐No ☐N/A Comments _____

b) Limited open beam ☐Yes ☐No ☐N/A Comments _____

c) Enclosed beam ☐Yes ☐No ☐N/A Comments _____

[6] Laser controlled area:-

a) Access/egress during emergency. ☐Yes ☐No ☐N/A Comments _____

b) Emergency shutoff clearly marked. ☐Yes ☐No ☐N/A Comments _____

[7] Beam directed away from doors and pathways. ☐Yes ☐No ☐N/A Comments _____

[8] Beam barriers/beam stops in placed. ☐Yes ☐No ☐N/A Comments _____

[9] Beam path not at eye level. ☐Yes ☐No ☐N/A Comments _____

[10] Reflective materials kept out of beam path. ☐Yes ☐No ☐N/A Comments _____

[11] Fiber optics bend radius maintained. ☐Yes ☐No ☐N/A Comments _____

E. Administrative Safety Controls

[1] Personnel have received Laser Safety Training. ☐Yes ☐No ☐N/A Comments _____

[2] Lab Laser Safety Procedures available. ☐Yes ☐No ☐N/A Comments _____

[3] Laser specific alignment procedures available. ☐Yes ☐No ☐N/A Comments _____

[4] Emergency contact list available. ☐Yes ☐No ☐N/A Comments _____

[5] Training records for lab laser safety. ☐Yes ☐No ☐N/A Comments _____

[6] Visitor policy available. ☐Yes ☐No ☐N/A Comments _____

[7] Service and repair personnel policy available. ☐Yes ☐No ☐N/A Comments _____

[8] Evidence of burn marks. ☐Yes ☐No ☐N/A Comments _____

[9] Reflective materials in beam path. ☐Yes ☐No ☐N/A Comments _____

F. Personal Protective Equipment

[1] Laser safety eyewear available with labeling. ☐Yes ☐No ☐N/A Comments _____

[2] Laser safety eyewear condition adequate. ☐Yes ☐No ☐N/A Comments _____

Wavelength(s)	Min. OD	Available OD	Wavelength(s)	Min. OD	Available OD

[3] UV laser skin protection. ☐Yes ☐No ☐N/A Type: _____

G. Non Beam Hazards

[1] Electrical Hazard

a) Excessive wires/cables on the floor. ☐Yes ☐No ☐N/A Comments _____

b) Uncovered and improperly insulated electrical terminal (electrical shock). ☐Yes ☐No ☐N/A Comments _____

c) Capacitors, if present are properly grounded and discharged. ☐Yes ☐No ☐N/A Comments _____

[2] Non Laser Radiation (NLR):

a) Ionizing radiation. ☐Yes ☐No ☐N/A Comments _____

b) Optical radiation (UV, blue light, intense bright light and thermal emission). ☐Yes ☐No ☐N/A Comments _____

c) Plasma emissions. ☐Yes ☐No ☐N/A Comments _____

d) Radiofrequency (RF) and Microwave (MW). ☐Yes ☐No ☐N/A Comments _____

[3] Fire hazards. (Irradiance > 10 W/cm^2; or beam power > 0.5W)

a) Combustible material ☐Yes ☐No ☐N/A Comments _____

b) Oxidizing agent ☐Yes ☐No ☐N/A Comments _____

[4] Explosion hazards (arc lamp, capacitor banks, chemical reactants, etc.) ☐Yes ☐No ☐N/A Comments _____

[5] Mechanical hazards. ☐Yes ☐No ☐N/A Comments _____

[6] Noise. ☐Yes ☐No ☐N/A Comments _____

[7] Fiber optics fragments. ☐Yes ☐No ☐N/A Comments _____

[8] Nanoparticles. ☐Yes ☐No ☐N/A Comments _____

G. Non Beam Hazards

[9] Laser generated air contaminants (LGAC)

a) Exhaust ventilation. ☐Yes ☐No ☐N/A Comments _____

b) Sensor/alarms, chemical agent control measures. ☐Yes ☐No ☐N/A Comments _____

[10] Visitor policy available. ☐Yes ☐No ☐N/A Comments _____

[11] Laser dye and solvent use.

a) Proper label. ☐Yes ☐No ☐N/A Comments _____

b) Storage/placed in secondary container. ☐Yes ☐No ☐N/A Comments _____

c) Operating fumed hood for dye mixing. ☐Yes ☐No ☐N/A Comments _____

[12] Human factors:-

a) Ergonomics ☐Yes ☐No ☐N/A Comments _____

b) Limited work space. ☐Yes ☐No ☐N/A Comments _____

c) Housekeeping. ☐Yes ☐No ☐N/A Comments _____

[13] Use of chiller or cryogens. ☐Yes ☐No ☐N/A Comments _____

H. Laser System Calculations

Laser Class Wavelength(s) OD NOHD NHZ

See attached calculations for each lasers.

I. Comments/Findings/ Recommendations:

J. New Laser System Information (If new lasers were found)

Location	Mfr.	Model	Serial #	Classification	Medium	Mode	Diameter (mm)	Divergence (mrad)	Power (W)/(/pulse)	Pulse rate (Hz)	Pulse width (s)