

LASER INSPECTION FORM

Permit Holder Information	
Permit Holder (Name & ID):	Date:
Department	Laser Location:
Additional Info:	

This inspection form assesses your laboratory's laser compliance status in accordance with state and TAMU laser regulations. This inspection form provides a mechanism for identifying weaknesses in your laboratory and an opportunity for you to correct deficiencies. It is important that any deficiencies identified during this inspection be promptly addressed and corrected.

SUMMARY OF INSPECTION:

	No items of noncompliance or unsafe conditions were identified.
	Items of noncompliance or unsafe conditions were identified.
Comments/Suggestions:	

If assistance is desired in correcting deficiencies, implementing suggestions, or if you have questions or comments regarding this review, please contact radiological-safety@tamu.edu or EHS at (979) 845-2132 and ask for Radiological Safety.

Inspector Signature: _____ Date: _____

Permit Holder Signature: _____ Date: _____

Controlled Area requirements §289.301(r)(3)(E):	Yes	No	N/A
Each registered laser is operated in a controlled area			
Access to the controlled area is restricted			
Controlled Area access point is posted with either “ Danger- Laser Radiation – Avoid direct eye exposure.” for class IIIB lasers, or “Danger – Laser radiation - Avoid eye or skin exposure to direct or scattered radiation.” for class IV lasers			
Optical paths from the Controlled Area are controlled to limit transmitted laser radiation to the MPE.			
(Class IV) Safety interlocks which allow rapid personnel egress are used to prevent entry into a Controlled Area during operation.			
Class IV controlled area requirements if controlled area interlocks are not applied §289.301(r)(3)(E)(II):	Yes	No	N/A
All authorized personnel shall be trained in laser safety and appropriate personal protective equipment shall be provided upon entry.			
A door, blocking barrier, screen, or curtains shall be used to block, screen, or attenuate the laser radiation at the entryway.			
A visible or audible signal indicating that the laser is energized and operating at Class 4 levels.			
Personnel authorized to enter the controlled area receive appropriate protective equipment prior to entry.			
Whenever barriers are removed for maintenance or service, a temporary control area must be established and posted.			
Caution signs, labels and postings for lasers §289.301(v):	Yes	No	N/A
Labels are clearly visible, legible and permanently attached to the laser unit.			
The laser unit is labeled with the words "AVOID EXPOSURE - Laser radiation is emitted from this aperture"			
(Class IIIB) Portions of the laser housing that is designed to be removed is labeled with: "DANGER - LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM"			
(Class IV) Portions of the laser housing that is designed to be removed is labeled with: "DANGER - LASER RADIATION WHEN OPEN. AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION"			
TAMU asset/inventory tag present.			
<ul style="list-style-type: none"> The word "invisible" shall immediately precede the word "radiation" on labels and signs for wavelengths of laser and collateral radiation that are outside of the range of 400 to 700 nm. The words “visible” and "invisible" shall immediately precede the word "radiation" on labels and signs for wavelengths of laser and collateral radiation that are outside of the range of 400 to 700 nm. 			
Engineering Controls §289.301(r)(3):	Yes	No	N/A
Lasers have protective housing that prevents human access during the operation.			
The electrical inputs’ for the lasers and control systems permit lock-out/tag-out.			
Laser units have a service access panel.			
The laser unit has a visual or audible indicator that laser radiation is being emitted from the device. <ul style="list-style-type: none"> If laser and power source are more than 2 meters apart, then both components must have the visual or audible indicator. 			
The lasers incorporate either a key-actuated or computer actuated master control.			
(Class IV required/ Class IIIB recommended) Laser units have remote interlock connectors.			
Removable protective housings are equipped with safety interlocks that prevents accessibility to radiation above MPE.			

Interlock requirements §289.301(r)(3)(B)					
<ul style="list-style-type: none"> • <u>Interlocks shall not allow automatic accessibility of radiation emission above MPE limits when the interlock is closed.</u> • <u>Adjustments during operation, service, testing or maintenance shall not cause the interlocks to become inoperative or the radiation to exceed MPE limits outside protective housing.</u> • <u>For pulsed lasers, interlocks shall be designed so as to prevent firing of the laser; for example, by dumping the stored energy into a dummy load.</u> • <u>For continuous wave lasers, the interlocks shall turn off the power supply or interrupt the beam; for example, by means of shutters.</u> 					
Special Engineering Controls:			Yes	No	N/A
Infrared laser beams are terminated at fire resistant materials. (Does the material show signs for degradation?) §289.301(s)(1)					
Incorporated viewing optics and windows attenuate the laser beam to below the MPE. §289.301(r)(3)(C)					
Optical Fibers §289.301(s)(2):			Yes	No	N/A
Optical Fiber connectors are labelled.					
A tool is required to disconnect an optical fiber connector for service and maintenance purposes.					
Connectors are labelled appropriately as specified by §289.301(v)(3)					
Protective Equipment §289.301(t):			Yes	No	N/A
Appropriate PPE is present and provide sufficient comfort and coverage.					
The eyewear are labelled with the correct wavelength and optical density.					
The eyewear is inspected annually for defects and documentation is maintained.					
Protective gloves, clothing, and shields are used when there is a reasonable probability that the MPE (Maximum Permissible Exposure) for the skin will be exceeded.					
Administrative Controls:			Yes	No	N/A
Authorized users are provided with written instructions for safe use, including clear warnings and precautions to avoid possible exposure to laser. §289.301(r)(2):					
(Unenclosed beam paths) the normal hazard zone (NHZ) is determined for all unenclosed beam paths. §289.301(u)					
(Class IV required/ Class IIIB recommended) Lasers should not be at eye-level. ANSI 4.3.10.1					
Administrative controls specified in place of engineering controls achieve equivalent laser safety protection.					
Records:			Yes	No	N/A
Documentation of past laser injuries present and maintained for 5 years. §289.301(aa)					
Records of laser receipt, transfer, and disposal are maintained. §289.301(j)(8)					
Annual eyewear inspection record present and maintained for 5 years. §289.301(t)(1)(E)					
TAMU laser safety training & refresher has been completed.					
Permit verification report (PVR) signed and returned to EHS.					