

Laser Safety for Confocal Microscope

Scope

This document covers safety topics for the use of lasers embedded in the confocal microscopes. They cover the normal use and maintenance operations. They implement the University's laser safety policy at a practical level and form part of the University's duties under ANSI Z136.1 standard.

Description

The confocal microscope room houses laser beams ranging from 402nm to 832nm the light (IR, visible and UV) from each is coupled by fiber optic to the confocal scanner, which moves a highly convergent low power beam across the specimen. Interlocks are in place to prevent users being exposed directly to the beam through the eyepieces.

Authorized users

There are two categories of user: maintenance user and confocal laser user, both categories require registration and approval prior to working with the confocal.

Laser Controlled Area

There is no permanent laser controlled area, although access to the room should be limited by key card and/or electronic card access.

General

Users are required to undergo basic laser training and must read the risk assessment for this equipment. Lab is advised to keep a roster of users for the machine and update every time there is a change in personnel. This roster should be present in the vicinity of the machine possibly in the same lab. If possible, name the personnel or company who is in charge of maintenance of the machine

Users must not dismantle any part of the equipment - except users named in "Procedures/Maintenance (ii)".

Procedures

(i) Users

These instruments have no user access to the laser path, and are intrinsically safe unless dismantled.

(ii) Maintenance (alignment & configuration)

Maintenance work that requires access to the laser path can only be undertaken by approved engineers, or designated maintenance users.

It is occasionally necessary for authorized maintenance users and/or engineers to disassemble these cytometers to alter the beam path (e.g. replacement of a laser). As large numbers of staff can access the room, it is necessary to lock the doors after block booking all machines for the duration of the maintenance. Laser goggles are available for all beams present. No unauthorized staff can be present during these procedures. No metal watches or jewelry can be worn during exposed beam procedures. It is recommended to placard the lab during maintenance.

Summary of Hazard

There is little hazard in the day-to-day use of the equipment. However, introducing a reflective object into the beam during scanning must be avoided, see the above paragraphs and the risk assessment for maintenance hazard

Contingency plan

In the event of a suspected laser related injury or emergency the Laser Safety Officer (323) 864-3209 and Department of Public Safety x04321 must be alerted. In the event that the suspected injury was caused by a stray beam power should be cut off. All laser injuries should be investigated clinically.

Attachments:

- Laser System and Personnel Registration
- User Manual
- Lab Specific Standard Operating Procedure
- Other documents (Specify):

User declaration

I have read and understand the above rules

Name of Principal Investigator:

Date:

Date of Review:

Laser Safety Officer name: