

While an important part of your SOP, this list of all Authorized Users, including their badge number, should appear as Appendix C of this document and users should sign the document to verify that they have read and understand the Standard Operating Procedure for the LCA. Appendix C can be updated as frequently as needed.

Incidental Personnel

In addition to the authorized primary users, incidental personnel may be in the room at the time of the experiment. These personnel are not trained on the system, nor have they gone through the laser safety program. They will be observing only and not involved in the operation of the system. They will not be in the room during any alignment or maintenance of the lasers.

Normal Laser Operation

Zeiss LSM 510 confocal/multiphoton microscope contains the following lasers:

Class	Type	Make/model	S/N	Wavelength (nm)	Power output (mW)
3B	Argon Gas	Lasos/LGK7812 ML4	577009-2125-000	457-514	50
3A	HeNe Gas	Lasos/ LGK 7786 P	577009-1136-000	543	5
3B	HeNe Gas	Lasos/ LGK 7628 1	577009-0709-100	633	15
4	Solid state	Coherent/Verdi	V5 90630883	532	5,000
4	Ti:Sapphire	Coherent/Miro 900	1121907	710-900	2,000

Visible light lasers are connected to the Zeiss LSM 510 Laser Scanning Confocal Microscope via fiber optic cable. The Multiphoton laser is connected to the LSM 510 through hard-coupled optics in an enclosed pathway. The visible light lasers (Argon and HeNe's) are located on a laser module "cart" installed on the left of the anti-vibration table. The Verdi/Mira lasers are located on the anti-vibration table, rear of the microscope and monitors.

The main purpose of these lasers is for laser scanning Confocal and multiphoton imaging of fixed and live specimens.

Eyewear section

Wavelength specific eyewear will be used by field service engineers during alignment into the fiber optic cable (visible laser lines) or the hard-couple optics (pulsed NIR lines). No facility staff and users will be within the laser controlled area during laser maintenance, service or alignment.

Alignment Hazard Control

All lasers are aligned by service engineers and are not adjusted by users or facility staff.

Laser Hazard Control

1. Access to laser control room is restricted to trained personnel. The room is secured by a card-access door reader. All access is approved by the campus police.
2. The entire system is enclosed by laser proof curtain.
3. Operation of all Class 3A and 3B lasers is only accessible through the system software. Computer access is restricted to trained users with unique login names and passwords.
4. A "Laser in Use" warning sign is mounted above the entrance of the enclosed system booth.
5. All lasers are enclosed with no open beam throughout the path.
6. All users are trained in the operation of the Zeiss LSM 510 confocal and the proper use and care for the lasers.

Control of Additional LCA hazards

Indicate other possible hazards associated with the lasers in your LCA.

Associated Chemical Hazard Control

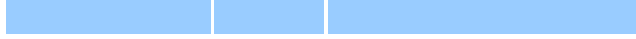
List chemicals used in this LCA include a list MSDS numbers, or attach MSDS's to the end of the document (not required to attach MSDS sheets). If you prefer, provide the chemical list section from your Project Review Document as an Appendix. Indicate in this section if there is a registered Satellite Waste Accumulation Area in the LCA and where it is located. Discuss any site-specific chemical hazards for this LCA in this section.

Emergency Procedures

1. Shut down the laser system. Use "emergency stop" button if equipped.
2. Provide for the safety of the personnel, i.e. first aid, CPR, etc.
3. If a fire has been created as a result of the laser, follow appropriate procedures to put out the fire:
 - Within the surgical field, douse with sterile water
 - For fires in other areas, utilize an appropriate class fire extinguisher to extinguish the fire
4. Obtain medical assistance. In the event of a suspected eye injury, have the injured person keep their head upright and still to restrict any bleeding in the eye.
 - For life-threatening injuries (major burns, cardiac arrest following electrocution), dial 911 for immediate medical assistance.
 - For non-life threatening injuries (laser eye injuries, minor skin burns), employees should be evaluated by a physician as soon as possible. **Do not allow anyone with a potential laser eye injury to drive themselves.**

Emergency Dispatch
UT Medicine

911 (from campus phone)
(210) 450-9100



This SOP has been adapted with permission from Argonne National Laboratories.