

# Michigan Technological University, Department of Physics

## Laser Safety Standard Operating Procedure (SOP)

Department/Laboratory: \_\_\_\_\_

Date: \_\_\_\_\_

Procedure #: \_\_\_\_\_

Revision Number: \_\_\_\_\_

P.I.: \_\_\_\_\_

- **This procedure shall be read and signed annually by all persons who use lasers listed in the SOP.**
- **This procedure shall be reviewed every two years by the Permittee/Laboratory LSS to ensure it reflects the most current conditions.**

### 1. LASER SAFETY CONTACTS

Laboratory Laser Safety Supervisor (LSS) \_\_\_\_\_

Phone number \_\_\_\_\_

University Laser Safety Officer \_\_\_\_\_

Phone number \_\_\_\_\_

Maintenance/Repair \_\_\_\_\_

Phone number \_\_\_\_\_

In case of Medical Emergencies

1. Call **123**
2. Notify the Laboratory LSS and University LSO of all laser-related injuries and near misses ASAP

### 2. LASER DESCRIPTION

Attach latest Laser Inventory. Update as required.

### 3. LASER SAFETY PROGRAM

See the Michigan Tech Laser Safety Program Manual for:

- Responsibilities of the laser operator/user, Permittee, and Laser Safety
- Supervisor Laser Permit Requirements
- SOP, Training Requirements, and Interlocks
- Eyewear Requirements, including annual eyewear inspections
- Sign and Labeling Requirements
- Non-radiation Hazards

## 4. HAZARDS AND CONTROLS

## Hazards and Controls

Check if applicable	Hazard	Control(s)
<input type="checkbox"/>	High Voltage	
<input type="checkbox"/>	Capacitors	
<input type="checkbox"/>	Unenclosed Beam Access to Beam	
<input type="checkbox"/>	Fumes/Vapors	
<input type="checkbox"/>	Ultraviolet Radiation or Blue Light	
<input type="checkbox"/>	Compressed Gases	
<input type="checkbox"/>	Hazardous Chemicals/Waste	
<input type="checkbox"/>	Housekeeping	
<input type="checkbox"/>	Reflective Material in Beam Path	
<input type="checkbox"/>	Fire	
<input type="checkbox"/>	Laser at eye level of person sitting or standing	
<input type="checkbox"/>	Infrared Lasers	
<input type="checkbox"/>	Correct Eyewear	

Comments:

**Additional Controls**

Check if applicable	Control	Comments
<input type="checkbox"/>	Entryway (door) Interlock or Controls	
<input type="checkbox"/>	Laser Enclosure Interlocks	
<input type="checkbox"/>	Laser Housing Interlocks	
<input type="checkbox"/>	Panic Button Emergency Stop	
<input type="checkbox"/>	Beam Stops	Infrared Laser must terminate in fire-resistant material and the absorber must be inspected at least quarterly <sup>1</sup>
<input type="checkbox"/>	Master Switch (operated by key or code)	
<input type="checkbox"/>	Laser Secured to Base	
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		

Comments:

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<sup>1</sup> Required by 25TAC§.301(s)(l)

5. PERSONAL PROTECTIVE EQUIPMENT

**Laser Eyewear**

For this Laser...

...Wear this Eyewear

Laser Acquisition Date	Laser Type	Laser Wavelength (nm)	Eyewear Wavelength Attenuated (nm)	Eyewear Optical Density (OD)	Remarks
<i>(Example) Aug 1999</i>	<i>CO<sub>2</sub></i>	<i>10,600</i>	<i>10,600</i>	<i>At least 3.5</i>	<i>Glendale – white frames</i>

Identify each set of laser protective eyewear with a unique designation (name or number)

The following check shall be done annually. Discard unfit eyewear. See section 6.5

Item	Comments	Date/Initial
Adequate pairs of eyewear for all needs		
Eyewear specific to wavelength		
OD appropriate for full range of power, alignment to power ops		
Fit snugly		
Free of damage / excessive scratches		

What (item)	And is available from (where)	Which must be worn (when)

**6. OPERATING PROCEDURES**

- A. Initial preparation of lab environment for normal operation (key position, warning light on, interlock activated, identification of personnel, other)
  
- B. Target area preparation
  
- C. Operation procedures are as follows:
  
- D. Shutdown procedures for this laser are as follows:
  
- E. Special procedures (alignment, safety tests, interlock bypass, emergency, etc.)



