

Appendix 13. Laser Safety Checklist

The checklist below was developed for use by the LRO to help identify shortcomings in laser safety and areas of deviation from this Code that need to be addressed in the risk assessment. It can also be used by the OLRO during routine inspections of laser areas. However, it does NOT claim to be comprehensive, nor is it designed as a check list for compliance to the Code.

Name: Dept. & Section:
 Building and Room No: Ext. No:
 Building and room(s) to which this assessment applies:

1. Do all the laser sources have the appropriate classification and warning label(s)?

Points to consider: **YES/NO**
 Laser products need to bear signs conforming to BS EN 60825-1.
 If commercial laser products have been modified their classification should be checked.

2. Is the use of optical viewing permitted within the laser area? **YES/NO**

If YES, please summarise the precautions taken to preventing hazardous levels of laser exposure.
State if Class 1M and 2M lasers are in use.

3. Are dazzle-susceptible activities (e.g. vehicle driving, working at heights) permitted within in the laser area? **YES/NO**

If YES, please summarise the precautions taken to control these activities and/or visible laser beams
(If no visible-beam lasers, state 'None')

4. Are there normally Class 3B and Class 4 open beam paths in the laser area? **YES/NO**

If YES, please indicate which of the following control measures below are in place:

- | | |
|---|-------------|
| a. All beam paths are enclosed as much as is reasonably practicable. | YES/NO/N.A. |
| b. All beam path components that generate errant beams are locally enclosed. | YES/NO/N.A. |
| c. All beam paths are properly terminated. | YES/NO/N.A. |
| d. All unprotected open horizontal laser beams lie above or below normal eye level. | YES/NO/N.A. |
| e. All lasers and optical components on the beam line are securely mounted. | YES/NO/N.A. |
| f. Shiny surfaces (including jewellery) are not permitted around laser beam paths. | YES/NO/N.A. |

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| g. Laser beam paths do not cross walkways. | YES/NO/N.A. |
| h. All upwardly directed beams are shielded to prevent human exposure. | YES/NO/N.A. |
| i. Laser sources and beam paths are kept under the control of competent persons | YES/NO/N.A. |
| j. Information of the current laser hazard is clearly displayed at each and every point of access to the laser area. | YES/NO/N.A. |
| k. Low level lighting is provided for 'lights-out' operations | YES/NO/N.A. |
| l. Persons at risk of exposure to the laser radiation have received adequate laser safety training and instruction. | YES/NO/N.A. |
| m. A safe method of beam alignment is provided. | YES/NO/N.A. |
| n. A visible or audible warning of the potential laser hazard is provided. | YES/NO/N.A. |
| o. Unauthorised persons are prevented from gaining access to the laser area. | YES/NO/N.A. |
| p. Precautions are in place to safeguard visitors entering the laser area. | YES/NO/N.A. |
| q. Multiple wavelengths. | |
| r. Laser safety eyewear is provided. | YES/NO/N.A. |

If NO to any of the above, please summarise precautions that are taken to control these activities:

5 Do all 3B and 4 laser operations take place within a Designated Laser Area?

YES/NO

If YES, please indicate which of the following control measures below are in place:

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|--|-------------|
| a. The DLA presents a robust physical boundary that isolates laser radiation from personnel outside the area. | YES/NO/N.A. |
| b. The DLA boundary (including windows) is opaque at the laser wavelengths and without gaps. | YES/NO/N.A. |
| c. Points of entry from hazard-free to laser hazard areas within the DLA (e.g. a door or opening from a room for changing or data collection) carry current laser hazard information. | YES/NO/N.A. |
| d. All hazards are clearly identified at all access points to the DLA. | YES/NO/N.A. |
| e. Where different laser wavelengths are accessible in the DLA at different times accurate status information is displayed at all access points. | YES/NO/N.A. |
| f. The laser hazard cannot extend beyond the DLA if a door into the DLA is opened. | YES/NO/N.A. |
| g. The laser hazard is automatically terminated if an unauthorised person enters the DLA. | YES/NO/N.A. |
| h. The laser hazards from separate laser experiments within the DLA are isolated and information of the current laser hazard within a sub-divided area is clearly displayed at points of access. | YES/NO/N.A. |
| i. Independent non-laser activities are prohibited within the DLA. | YES/NO/N.A. |
| j. Prior warning is provided if laser hazards are introduced from outside the DLA. | YES/NO/N.A. |
| k. Laser beams entering the DLA from other (adjacent) areas are under sole and overriding control from within the DLA. | YES/NO/N.A. |
| l. Temporary restrictions are imposed for servicing and other non-routine activities within the DLA | YES/NO/N.A. |

If NO to any of the above, please summarise precautions taken to control these activities:

- 6 Is laser safety eyewear provided? **YES/NO**
- If YES, please which of the following control measures below are in place:**
- a. Laser safety eyewear provides sufficient protection for each accessible hazardous laser wavelength (including wavelengths that could be generated by non-linear effects) YES/NO/N.A.
 - b. Laser eyewear is properly stored and maintained in good condition. YES/NO/N.A.
 - c. The eyewear clearly identifies the laser/area within the DLA it is suitable for. YES/NO/N.A.
 - d. Lighting levels are appropriate for the visual transmission of the eyewear. YES/NO/N.A.
 - e. The colours of warning signs and lights are effective when viewed through the eyewear. YES/NO/N.A.

If NO to any of the above, please provide a brief justification:

- 7 Are there non-beam hazards associated with laser use (including during servicing and maintenance)? **YES/NO**
- If YES, are control measures in place to address the following hazards:**
- a. Fire hazard (with Class 4 laser beams). YES/NO/N.A.
 - b. Laser generated fume hazard. YES/NO/N.A.
 - c. Electrical hazards. YES/NO/N.A.
 - d. Explosion hazard. YES/NO/N.A.
 - e. Secondary and collateral radiation. YES/NO/N.A.
 - f. High-pressure gas hazard. YES/NO/N.A.
 - g. Trip hazards and sharp corners at head height. YES/NO/N.A.
 - h. Other non-beam hazards:. YES/NO/N.A.