

ILLUSIONS AUSTRALIA

SAFE WORK PROCEDURE

SWP 050 – LASERS - CLASSES 3A, 3B & 3R

1. PURPOSE AND SCOPE

Minimum requirements for use of higher-risk Class 3R/legacy 3A and Class 3B laser products at Illusions Australia.

These lasers require specific risk assessment and controlled use; Class 3B beams can cause immediate eye injury and may also present skin/fire hazards depending on power and wavelength.

2. AUTHORISATION AND COMPETENCY

Only specifically trained, competent and authorised persons may operate these lasers.

The laser classification, wavelength, power, beam path, protective eyewear requirements and controlled-area arrangements must be established before use.

3. REQUIRED PPE

The following PPE must be worn as appropriate:

- Wavelength- and optical-density-appropriate laser protective eyewear where required by the risk assessment/manufacturer.
- Other task-specific PPE.
- Protective eyewear must be correctly rated for the actual laser; generic safety glasses are not laser protection.

4. PRE-START CHECKS

Before commencing work, confirm that:

- Laser class, wavelength and output are known.
- Engineering controls, key control, interlocks/shutters and beam stops are functional where fitted.
- Controlled area is established and access restricted.
- Beam path is enclosed as far as practicable and terminated with a suitable beam stop.
- Specular reflective items are removed from the beam path.
- Correct laser eyewear is available and undamaged where required.
- Warning signs/indicators are in place.
- Emergency shutdown is known.

5. SAFE OPERATING PROCEDURE

1. Restrict access to authorised persons.
2. Set the beam path below or above eye level where practicable and enclose it wherever possible.
3. Install suitable beam stops and barriers before energising.
4. Remove jewellery/tools or reflective surfaces from the beam path.
5. Wear correctly specified eyewear where required.
6. Use the lowest output necessary for setup/alignment.

7. Avoid direct viewing and use indirect viewing/alignment methods.
8. Switch off or shutter before changing the optical setup where practicable.
9. Secure keys/controls against unauthorised operation after use.

6. PROHIBITED PRACTICES

Workers must not:

- Operate without the required controlled area.
- View the direct or specularly reflected beam.
- Use eyewear of unknown or incorrect wavelength/optical density.
- Aim the beam into uncontrolled areas.
- Bypass interlocks or remove protective housings without specific authorisation.
- Perform alignment at full power where a lower-power method is available.
- Allow untrained persons into the nominal hazard area.

7. EYE AND SKIN HAZARD

Higher-class lasers can injure the eye before an aversion response is possible.

- Prevent exposure by enclosure, barriers and beam stops.
- Use correctly rated eyewear only as a supplementary control.
- Keep skin out of high-power beam paths.

8. CONTROLLED AREA AND REFLECTIONS

Specular reflections may retain hazardous beam energy.

- Remove reflective jewellery and tools.
- Use matte/non-reflective barriers.
- Control doors and access during operation.

9. ALIGNMENT AND MAINTENANCE

Setup is often the period of greatest exposure risk.

- Use minimum power.
- Use remote/indirect viewing where practicable.
- Only authorised competent persons may access internal laser components.

10. FAULTS, DAMAGE AND ABNORMAL CONDITIONS

Stop for missing labels, failed interlock/shutter, damaged eyewear, uncontrolled reflections, unauthorised entry or unexpected beam behaviour.

De-energise and secure the laser until controls are restored.

11. SHUTDOWN AND HOUSEKEEPING

- Shutter/switch off and isolate as required.
- Secure keys.

- Remove temporary beam paths only after de-energisation.
- Store protective eyewear correctly.
- Report defects or exposure incidents immediately.

12. EMERGENCY AND INCIDENT RESPONSE

1. Stop the equipment or activity immediately.
2. Isolate the hazard or energy source where safe to do so.
3. Provide or obtain first aid as required.
4. Notify the Foreman, Leading Hand or other authorised Illusions Australia representative.
5. Call emergency services where required.
6. Do not recommence until the incident, defect or unsafe condition has been addressed.

13. STOP WORK REQUIREMENT

Work must stop where:

- Laser parameters/classification are uncertain.
- Correct protective controls or eyewear are unavailable.
- Access cannot be controlled.
- Beam cannot be safely terminated.
- Any person may have received unintended exposure.

No production requirement or deadline takes priority over safe work.

DOCUMENT CONTROL

Document	SWP 050 – Lasers - Classes 3A, 3B & 3R
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Prepared By	Aidan McDonnell
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