TOOLBOX TALK AWARENESS PACKAGES

HAZ-NIR · Lasers, UV and Radiofrequency Awareness

Product Overview

Audience: Workers and supervisors who work with or near lasers, welding arcs and UV lamps, or near radio towers, rooftop antennas and other transmitters · Duration: 20–30 minutes

Version 1.0 · 22 November 2026

For anyone who works with or near lasers, welding arcs, UV lamps, or radio towers and rooftop antennas: what non-ionising radiation can do to eyes and skin, laser classes, arc eye, radiofrequency exclusion zones, and the controls that keep you out of the beam.

Non-ionising radiation at work comes from lasers used for measuring, levelling, cutting, marking and in medicine and beauty; from ultraviolet (UV) light from welding arcs, curing lamps and germicidal lamps; and from radiofrequency (RF) energy sent out by radio towers, mobile phone antennas on roofs, radar and other transmitters. It cannot always be seen or felt, and the damage it does to eyes and skin can be done in an instant.

This talk covers what lasers, UV and radiofrequency can do to the body, how laser classes and labels work, arc eye and protecting bystanders from welding, interlocks on UV lamps, exclusion zones around antennas, and the controls from the top down. It is awareness, not laser safety officer, welding or RF work training.

Learning outcomes

By the end of the session participants will be able to:

- Name the main sources of non-ionising radiation at work: lasers, welding arcs, UV lamps and radiofrequency transmitters
- Explain how lasers, UV and radiofrequency can harm the eyes and skin, and why the damage can be instant
- Read a laser's class and warning label, and know that higher classes need trained operators and controlled areas
- Protect yourself and bystanders from welding arcs and UV lamps with screens, shields, interlocks and cover
- Respect radiofrequency signs and exclusion zones, and arrange for transmitters to be powered down before work near them
- Report an eye injury, a damaged shield or interlock, or a missing sign straight away

What it covers

Module	Covers
What it is	Lasers; UV from arcs and lamps; Radiofrequency from antennas
Controls that work	Laser classes and controlled areas; Screens, shields and interlocks; RF exclusion zones and power down
Your part	Never look into the beam or arc; Look after your eyes; Report it

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Activities

- Where is the radiation: workers look at four jobs, from fixing a roof beside a mobile phone antenna to welding near an open walkway, and decide how to keep people out of it
- What would you do: workers decide what to do in four situations, from a laser level aimed at eye height to a workmate with gritty, painful eyes after welding

What is in the package

Item	File
Editable PowerPoint presentation with speaker notes, plus PDF	02_TRAINING_PRESENTATION/Training Presentation.pptx and .pdf
Facilitator guide with a running sheet, discussion prompts and model answers	03_FACILITATOR_GUIDE/Facilitator Guide.docx and .pdf
Participant handout with the key points to take away	04_PARTICIPANT_HANDOUT/Participant Handout.docx and .pdf
Attendance record form, to capture who attended, when, and who facilitated	06_RECORDS/Attendance Record.docx and .pdf
Excel attendance register	06_RECORDS/Attendance Register.xlsx
Multiple-choice theory assessment, to record understanding if your business wants to	05_ASSESSMENT/Theory Assessment.docx and .pdf
Answer key for the assessment	05_ASSESSMENT/Assessment Answer Key.docx and .pdf
Certificate template	06_RECORDS/Certificate Template.docx
Start here: Read Me First, Product Overview, Permitted Use Terms, Version Information	01_START_HERE/ (four PDFs)

What you need to deliver it

- A facilitator such as a supervisor, leading hand or WHS adviser who has read the facilitator guide and knows your site's arrangements for the topic
- A screen or projector, or printed slides or handouts: it works in a crib room, site office or on a video call
- Your own site procedures for the topic, to point to during the session

Questions

Does it give the laser classes, power levels or safe distances? No, on purpose. The talk describes laser classes in general terms, from low power to high power, and quotes no class numbers, power levels, frequencies, distances or limits. Workers are told to read the laser's label and the maker's instructions, follow the site's procedures and the operator of any transmitter, and check what their regulator requires.

Can we add our own site procedures and photos? Yes. The slides, handout and guide are editable, and the facilitator guide marks the places to add your own procedures, contacts and photos of your workplace.

Do we have to use the assessment? No. It is there if your business wants a record that each worker understood the key points. The attendance record on its own shows who attended and when.

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TOOLBOX TALK

Lasers, UV and Radiofrequency Awareness

Light and energy you may not see: protecting your eyes and skin from lasers, UV and radiofrequency

20–30 minutes · Workers and supervisors who work with or near lasers, welding arcs and UV lamps, or near radio towers, rooftop antennas and other transmitters

[Company name] · [Date] · [Facilitator name]

NIR

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What this talk is, and is not

This talk covers

- ✓ Lasers and laser classes
- ✓ UV from welding arcs and lamps
- ✓ Radiofrequency from antennas
- ✓ Exclusion zones and your part

This talk is not

- ✕ Laser operator or safety officer training
- ✕ Welding or RF worker training
- ✕ Sun UV or x-ray radiation
- ✕ Our procedure: **[Our procedure for lasers, UV and antennas]**

Awareness only. Higher-class lasers and work near live transmitters need their own training, and some need a licence.

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What non-ionising radiation can do

Eyes and skin take the damage, sometimes in an instant.

- Lasers: eye injury, and burns from stronger beams
- Welding arcs: arc eye and skin burns, even to bystanders
- UV lamps: eye and skin burns from curing and germicidal lamps
- Radiofrequency: heating of the body close to antennas
- Reflections from shiny surfaces can do the same

A composite example

- A labourer walks past a welding bay with no screen and watches for a while.
- That night his eyes are painful and gritty. He had arc eye.

You do not have to be the one doing the work to be hurt.

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Duties under health and safety laws

The business must

- Identify lasers, arcs, lamps and antennas
- Control them, starting at the top
- Hold any licence the law requires
- Train, supervise and provide PPE

You must

- Follow signs, zones and procedures
- Never look into a beam or arc
- Use the screens and eye protection
- Report injuries and damage

Most health and safety laws give these duties. Check the law where you work (in Australia, WHS or OHS laws).

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The order of controls for lasers, UV and RF

1 **Elimination** Power down the antenna or switch off the source

2 **Substitution** A lower-class laser that still does the job

3 **Isolation** Enclosures, welding screens, exclusion zones

4 **Engineering** Interlocks, beam stops, shielded UV lamps

5 **Administrative** Permits, signs, labels, trained operators

6 **PPE** Eye and face protection matched to the source

HIGHER ORDER

Higher order controls remove or control the hazard at the source, or put a barrier between people and the hazard.

LOWER ORDER

Lower order controls rely on people to do a thing or wear a thing, every time, tired, distracted or rushed.

Behaviours are not on the hierarchy, but behaviours and culture decide whether every control on it actually works.

Eyewear is the last line, not the first.

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TOOLBOX TALK · HAZ-NIR

Lasers, UV and Radiofrequency Awareness

Participant handout · keep this

Lasers, welding arcs, UV lamps and antennas can harm your eyes and skin, sometimes in an instant. Keep this page.

The order of controls

1. Power down or switch off the source
2. A lower-class laser that still does the job
3. Enclosures, welding screens, exclusion zones
4. Interlocks, beam stops, shielded lamps
5. Permits, signs, labels, trained operators
6. Eye and face protection matched to the source

Eye injury or burn

- Stop, get first aid, see a doctor
- Do not rub your eyes; report it

Never

- Look into a beam or an arc
- Enter an RF zone until confirmed safe

Every job

- ☐ Is there a laser, welding arc, UV lamp or antenna near my work today?
- ☐ Do I know the laser's class from its label, and who is in control of it?
- ☐ Are welding screens up, and is my skin and face covered?
- ☐ Is any antenna I am working near switched off and tagged, or am I outside the zone?
- ☐ Is my eye protection right for this source, as the maker or procedure says?

Lasers

- Read the class on the label
- Higher classes: trained operators only

Who and where

- **[Laser and RF contact]**
- **[Who to report to here]**

Never look into the beam or the arc, and never enter an exclusion zone.

This is awareness training. It is not a licence, a ticket, a permit or a competency. It is not laser operator, welding or RF worker training.

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