

# STANDARD OPERATING PROCEDURE

## LASER LEVEL – Class 3A

**ONLY TRAINED PERSONNEL  
AUTHORISED TO OPERATE THIS EQUIPMENT**



### Identified Hazards

- Eye Damage (Self & Others)
- Exposure To Radiation
- Burn Injury From Acute Exposure
- Explosion Of Gases, Vapours Or Liquids

### Personal Protective Equipment Requirements to Operate



**Other | Additional PPE Requirements:** Laser safety glasses to suit laser class

### Introduction

**LASER** is an acronym which stands for **L**ight **A**mplification by **S**timulated **E**mission of **R**adiation.

- The laser produces an intense, highly directional beam of light. The most common cause of laser-induced tissue damage is thermal in nature, where the tissue proteins are damaged due to the temperature rise following absorption of laser energy.
- If a laser is transmitting in the ultraviolet or infrared it will be invisible to the eye

### Definitions

Lasers are rated by hazard classification, according to their ability to cause harm:

- **Class 1** lasers are not hazardous and are safe for use under all conditions of exposure.
- **Class 2** lasers are not normally hazardous due to the human eye's aversion responses (the automatic reflex to blink and look away from bright or sudden light sources).
- **Class 3A** lasers emit higher levels of light and are hazardous where eyes are exposed to direct laser beams or reflections from mirror / glass type surfaces such as levels or theodolites.
- **Class 3B (Restricted)** lasers operate at the same power levels as Class 3A but have higher levels of irradiance (power density). They are suitable for building or construction applications but should not be used in dimly lit areas.
- **Class 3B** lasers emit either invisible or visible radiation potentially hazardous to the eye and skin. These lasers must not be used for building or construction tasks.
- **Class 4** lasers are hazardous to eyes, and the direct beam is a fire hazard and serious skin hazard. These lasers are not to be used for constructions tasks.

### Operating Instructions

#### Pre-Operational Safety Checks

- Inspect the appliance for any visible obvious damage or faults.
- Appropriate laser warning signs must be in place prior to use.
- Do not use the laser level for anything other than its intended purpose.
- Laser beams must be set up either well above or well below eye level.
- Where practical the laser beam should be terminated at the end of its useful beam path.
- The laser category output intensity shall be checked by the operator & must be clearly marked on the laser.

#### Operational Safety Checks

- **NEVER** operate a faulty piece of equipment. Report any faults, problems or hazards **IMMEDIATELY**.
- The damage caused if a laser is focussed onto the retina of the eye can be greater than that caused by looking at the sun. Never look down a laser cavity or directly into the beam, even if wearing eye protection.
- The laser beam path must be controlled to prevent misdirected or reflected beams from other objects.
- Special care must be taken when using magnifying ocular devices such as theodolites in the same area.
- Visibly check the laser level for any damage or faults and that it is clean prior to returning it to storage.

**REFER TO THE MANUFACTURER'S OPERATIONAL MANUAL FOR FULL SAFETY REQUIREMENTS**