

Show Laser Safety

Short instruction sheet for live operation show laser use

2015

INTRODUCTION

In general there is no deeper knowledge necessary to operate a laser projector in a physical sense. However, laser light may be quite dangerous if it is not properly used.

Due to the coherence of the laser light (same direction and wave characteristics of the light - different to normal light sources), the very sharp rays can be dangerous to human eye or optical sensors.

However, if you respect you local laser safety regulations, it is possible to make a safe laser show.

REGULATIONS

Most important international norm for show laser applications:

IEC-60825-1

Most countries refer to that regulation in context of laser safety.

However, some countries may have much more fear of the "laser mystery" and thus may have stricter regulations.

The responsibility for laser operation is with the actual operator. So being careful is most important!

FACTS TO CONSIDER FOR SAFE SHOW LASER OPERATION

- Make sure to have the laser placed in proper distance when scanning the audience , so the impact power does not exceed 5mW (class 3R) at any place the audience is hit.
- Place safety zones in your software to reduce the power for areas where the impact power is too high.
- When scanning the audience, use a high scan speed, large deflection angle and non focused patterns.
- Never direct focused single beams to the audience. You may shoot beams above their heads (min height 3m from ground floor) as strong as you like.
- Use a safety shut-off solution (safety button etc.) to be able to switch of the system, e.g. if somebody tries to manipulate the lasers during operation or if somebody enters the laser safety area
- Keep people under age away from laser devices and laser operation
- Shut off the laser when leaving the control area, make laser operation impossible to third party
- Familiarize yourself with laser safety requirements prior to laser operation. Some countries (very few only) may need a Laser Safety Officer present on site during operation or may need a laser safety assessment of the installation.

Laser projectors are not dangerous themselves - the danger always comes from wrong operation!

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