

# LASER OPERATOR'S MANUAL

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**KLINGER**  
**LASERS**   
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## INTRODUCTION

This manual provides everything about the KLINGER LASERS Laser. It contains all relevant information which is necessary for set up and handling with device. A manual is supplied with every product and is valid throughout its lifetime. Please read it carefully before using the device.

**Thank you for buying this product.**

## LASER SAFETY INSTRUCTIONS

Light amplification by stimulated emission of radiation (LASER or laser) is a mechanism for emitting electromagnetic radiation, typically visible light, infrared or ultraviolet radiation. This mechanism produces intense beams of light. LASER is used mainly in measurement, industrial processing, medical diagnostics and surgery, for communication via optical fibers and many others. It is strictly forbidden to stare directly into the LASER. It may cause eye damage or blindness.

The norm EN 60825-1 categorizes lasers as follows:

**Laser devices of classes 1, 1M, 2, 2M, 3R, 3B and 4**  
Short-time irradiation (0,25sec.) in a wavelength range between 400nm and 700nm is not considered to be dangerous (except of the classes 3B and 4). However, you should not point the beam at people for a long time.

### RULES FOR LASER SAFETY

- Lasers produce a very intense beam of light. Treat them carefully.
- Never look into the laser aperture while the laser is turned on! **PERMANENT EYE DAMAGE COULD RESULT.**
- Never stare into the oncoming beam. Never use magnifiers (such as binoculars or telescopes) to look at the beam as it travels or when it strikes a surface.
- Never point a laser at anyone's eyes or face, no matter how far away they are.
- When using a laser in the classroom or laboratory, always use a beam stop, or project the beam to areas which people won't enter or pass through.
- Never leave a laser unattended while it is turned on and always unplug it when it's not actually being used.
- Never disassemble or try to adjust the laser's internal components. Electric shock could result.
- Do not drop the product or expose it to moisture or dust – it can be easily damaged.

## TECHNICAL SPECIFICATIONS

Input voltage:	2x 1.5 V size: AA battery
Operating temperature:	0 – 40°C
Power optical output (per beam):	$P_{max} < 3mW$
Dimensions (LxWxH):	114x35x20mm
Laser product:	CLASS 3R
Lens:	lens with line projection P-20
Laser type:	Diode
Wavelength RED:	635nm
Wavelength BLUE:	450nm
Wavelength GREEN:	532nm

## ELECTRICAL SAFETY INSTRUCTIONS AND WARRANTY

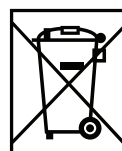
- The supply terminals are not to be short-circuited.
- The warranty is invalid if damage is caused by incorrect use or inappropriate handling.
- Exhausted batteries are to be removed from the device
- Non-rechargeable batteries are not to be recharged

**The set consists of:**

- 3x LASER (Green, Red, Blue) with 2 x of AA/R6 battery
- User's manual

## IMPORTANT AND WARNING LABELS

Warning label for laser Class 3R



This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment (WEEE). For more information about where you can drop off your waste equipment for recycling, please contact your local city office, our household waste disposal service or the shop where you purchased the product.