

# OPTICS TRADE

**Laser Infrared Illuminators**

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# GENERAL FEATURES

- An infrared illuminator is a flashlight that emits light in an infrared spectrum, which is invisible to the human eye, but visible for night vision devices
- Available in different wavelengths
- Laser IR illuminators are the most **powerful** illuminators and are based on an IR laser diode that produces the infrared light
- The name “Laser” stands for **L**ight **A**mplification by **S**timulated **E**mission **R**adiation
- The light out of a Laser is created when the electrons in atoms of special glasses or crystals absorb the energy from an electrical current
- They emit photons, which is the light that comes out of the laser emitter.



# ADVANTAGES

- The light out of a laser infrared illuminator is “coherent”, which means that the wavelength is very narrow and all emitted photons have the same wavelength
  - An LED for comparison, emits light in a much wider spectrum
- The emitted light out of an infrared laser illuminator is also very focused with a sharp edge on the side
- On illuminators with an adjustable beam, the light can be focused to a very small dot, which offers the user extreme distance observations

# DISADVANTAGES

- Since the emitted wavelength is very narrow, one infrared laser emitter can be used only for very specific night vision devices
- The battery consumption compared to an LED infrared emitter is much higher



# WHICH IR ILLUMINATOR FOR WHICH NIGHT VISION OPTIC

- When buying an infrared illuminator, you have to be cautious what is the **maximal wavelength** your night vision can detect
- If the emitted light of your infrared illuminator is beyond the spectrum, it is **invisible** for such a device
- **We recommend:**
  - For Gen. 1 NV devices an IR illuminator with a wavelength between 750nm and 780nm,
  - For Gen. 2 an illuminator with a wavelength of 850nm, or even higher (up to 900nm) if you own a high-quality IIT in your device
  - For Gen. 3 an IR illuminator is mostly not needed, but one with a wavelength of 850nm - 900nm would work perfectly
  - For a digital night vision device an IR illuminator with a wavelength between 850nm and 980nm

# MOUNTING OF IR ILLUMINATORS

- Because the most night vision devices are designed for **hunting** purposes, the manufacturers came up with different mounting solutions for the IR illuminators
- The most common are IR illuminators with a **30mm main tube**, so a normal rifle scope **mounting ring** can be used - this one can be then attached to the optic itself, or directly on the rifle
- The most common mounting solutions on NV optics are short 11-millimeter dovetail rails or **short Picatinny rails**
- The easiest way is to mount it on an existing Picatinny rail (if exists)
- If you don't have a Picatinny rail on your rifle, then a **clamp-mount** can be used. This can be clamped directly on your rifle scope or the rifle barrel





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