

# OPTICS TRADE

## 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
- Different wavelength for different NV device, for example:
  - Gen. 1 NV devices can see wavelengths up to 760-780nm
  - Gen. 2 NV devices can see wavelengths up to 850nm, except high-quality IIT's up to 900nm
  - Gen. 3 NV devices can see wavelengths up to 900nm, except high-quality IIT's up to 1000nm
  - Digital NV devices can see wavelengths up to 950nm or even 980nm



# WHICH IR ILLUMINATOR FOR WHICH NV OPTIC

- When buying an IR illuminator, you have to be cautious what is the maximal wavelength your night vision can detect
- If the emitted light of your IR illuminator is beyond the spectrum, it is invisible for your 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 (make sure before buying)
  - 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



# ARE IR ILLUMINATORS VISIBLE TO ANIMALS

- Yes, some IR illuminators are visible
- Unlike humans, some animals can detect longer wavelengths of light, so infrared illuminators with a wavelength of 760nm-780nm can be, for them, well visible
- For this reason, there are IR illuminators with longer wavelengths like 850nm, or even longer
- The wavelength beyond 850nm is for the majority of animals invisible, but it requires a digital NV device, or at least a Gen. 2 analog NV device



# TYPES OF IR ILLUMINATORS

- In the past, most IR illuminators were incandescent lamps (these were high power lamps that have a covered infrared filter)
- Now, the most popular infrared illuminators are with LEDs or with a laser emitter
  - LED illuminators have a group of infrared-emitting LEDs, which have a good IR light output and are very energy efficient.
  - High-quality LED illuminators produce IR light as strong as a laser illuminator
  - Laser IR illuminators are the most powerful illuminators and are based on an infrared laser diode
- Infrared illuminators are available with adjustable power or with fixed power
- Some infrared illuminators have also the ability to adjust the beam - wide illumination for close range, or small beam for long-range observations.

# 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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