

# OPTICS TRADE

LED Infrared  
Illuminators

May, 2020

# GENERAL FEATURES

- An infrared illuminator is simply said a **flashlight** that emits light in an **infrared spectrum**
- LED infrared illuminators are the most common illuminators on the market
- An LED is a semiconductor light source that emits light when current flows through
- LED infrared illuminators feature one or more **Light Emitting Diodes (LEDs)**
- Available in different wavelengths
- The newer LEDs are extremely **strong**
- LEDs almost completely replaced the older illuminators with an incandescent bulb
- LEDs do not need an additional lens which lets through only the light in the infrared spectrum
- LED 's can be built so that they radiate the light in a very narrow wavelength spectrum



# ADVANTAGES

- Small and easy to mount on a night vision device or directly on the rifle
  - There are some exceptions, but the bigger illuminators are designed for extreme distance observations and feature a high infrared light output
- LED 's use a very small amount of **energy**
- Are very resistant to shocks
- Because the light output is not “coherent“, one illuminator can be used for many types of night visions
  - This means a LED illuminator with an advertised wavelength of **875nm** radiates light from approximately **850nm** up to **900nm**



# DISADVANTAGES

- Because the light out of an LED illuminator is not “coherent“, this can also be a disadvantage
  - For example, an LED illuminator with a given wavelength of 850nm can radiate light from approximately 825nm up to 875nm. As we know, some animals can **detect** the light up to 850nm wavelength, so for them, it could be **visible**.
- This is especially noticeable on cheap infrared illuminators, where the radiation has a much bigger spectrum, for example from 800nm up to 900nm.
- On adjustable beam illuminators, when the light is focused on a small point for long-distance observations, the light gets a square shape



# 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 device 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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