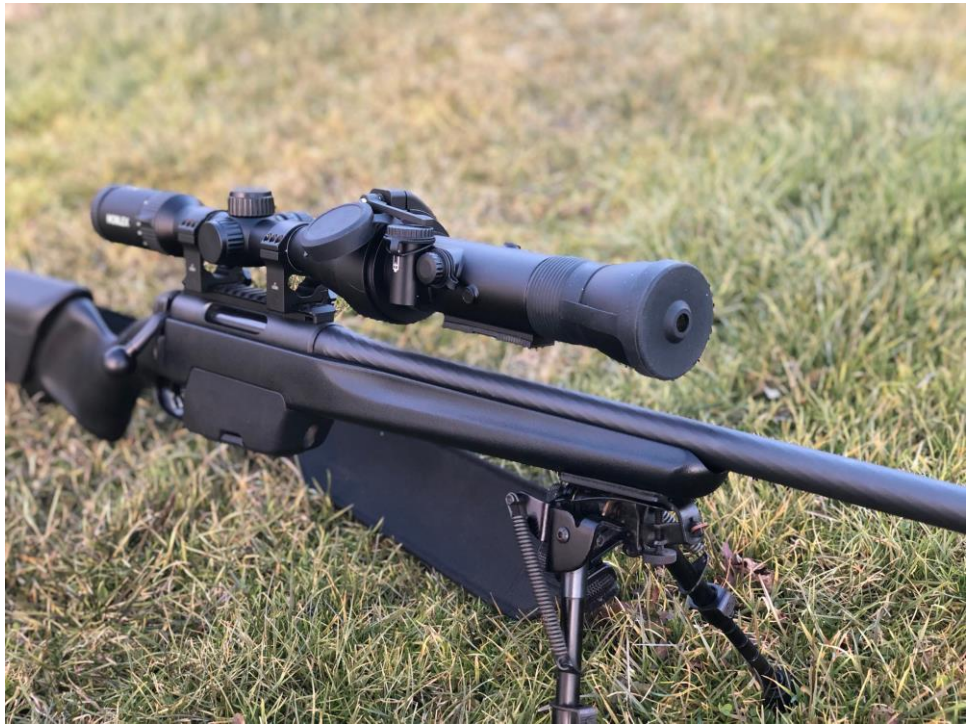
OPTICS TRADE

Night Vision Clip-on Systems

May, 2020

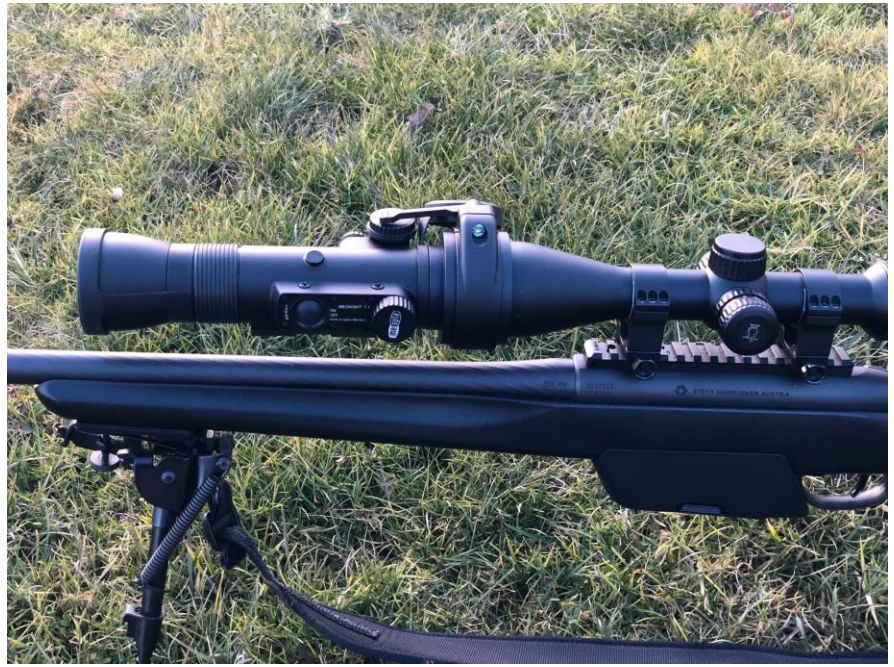
GENERAL FEATURES

- When the first night vision devices were developed, the military quickly needed a rifle-mounted version
- Night vision rifle scopes could be used only during the night
- For daytime operations, a mounted daytime rifle scope was needed.
- The user needed two rifles – with a day optic and a NV rifle scope
- If changing the optic, the user had to zero-in the rifle again
- Because of that the development of NV clip-on devices started
- They are available as digital or analog devices
- Can be mounted on the objective or on the ocular of the daytime optic
- The zero of the daytime rifle scope does not change
- The optimal magnification ranges from 1x to 6x, but some high-quality night vision clip-on devices are capable even over 10x.



MOST COMMON USE EXAMPLES

- Very popular for professional use since almost every daytime optic can be equipped with
- Also hunters like to use on clip-on devices
- Can be used for all hunting scenarios, so the user has to buy only one device for the night hunt
- Cheaper than separate night vision binoculars, or another night vision device
- Clipping the night vision clip-on device on a daytime optic can be done only in a matter of seconds
- If used on a binocular or monocular, can be very quickly swapped and clipped on a rifle scope

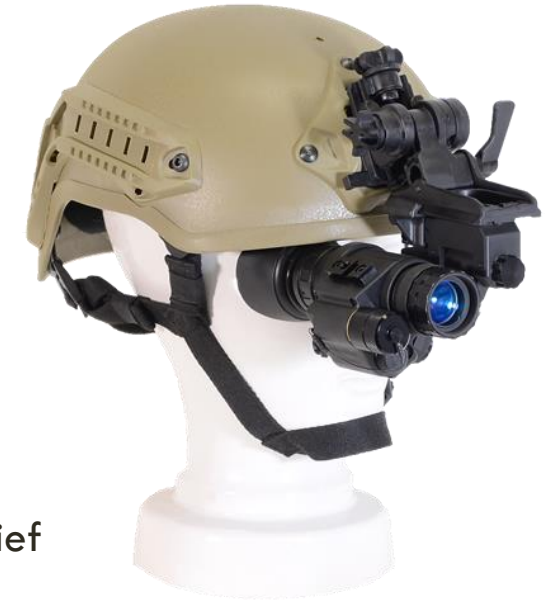


LAWS IN EU FOR NV CLIP-ON´S

- Owning a night vision clip-on device is not forbidden in most countries in the European Union
- They can be used for observation purposes, but mounting them on a daytime rifle scope is in some countries forbidden
- They can be, whatsoever, be used for hunting abroad
- Because these laws are constantly changing, we recommend you to make some research about owning and using it in your country.

NIGHT VISION SCOPES (MONOCULARS) VS NV CLIP-ONS

- Night vision clip-on´s are designed to be mounted on the ocular or on the objective of a day time optic
- Night vision scopes are designed as stand-alone optics
- The ocular of a clip-on has to be designed differently – so that the user gets the best possible image when it is mounted on a daytime optic
- Observation with a clip-on is also possible, but the image is small and it looks like in a tunel
- Many night vision clip-on devices do also not feature a diopter adjustment for focusing, but only the parallax adjustment
- Night vision clip-on devices are also designed to withstand the recoil of a rifle
- Mounting a NV scope on a daytime optic is very poppular among airsoft players
- We strongly recommend NOT mount a monocular on a centerfire rifle
- The recoil can damage the device or harm you in the eye due to the short eye relief



GREEN VS. BLACK&WHITE IIT

- The main difference makes the generation of the IIT and not the color of the image
- Black & white devices are available only from the 2nd generation upwards
- For many people, observing for a long period of time is more comfortable with a night vision device that features a green IIT
- Green IIT´s have often a brighter appearance
- The detail recognition is mostly better with a black & white IIT
- Night vision devices with a black & white IIT are more expensive

DIGITAL VS ANALOG NIGHT VISION

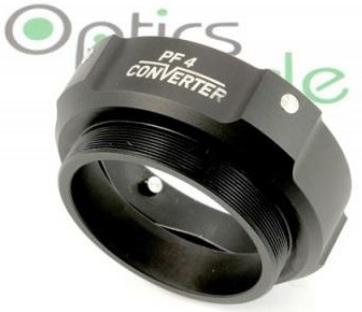
Pros and cons of each

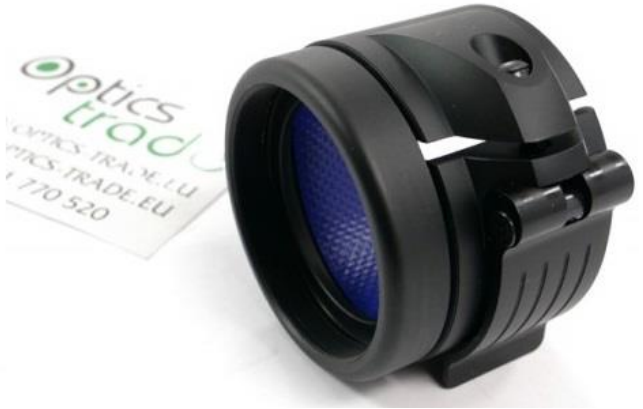
- Analog night vision
  - (+)Available with IIT´s of all 3 generations
  - (+)Direct image with no screen – no refresh rate
  - (+)Longer observation distances at night
  - (+)Very long battery life
  - (-)Should not be turned on during the day – the IIT can get damaged
  - (-)Not possible to take photos or videos
  - (-)No additional internal settings
  - (-)Only 1 fixed magnification

DIGITAL VS ANALOG NIGHT VISION

- Digital night vision
  - (+)Have a sensor and a screen – many possible settings
  - (+)Can also be used durring the day
  - (+)The magnification can be changed – digital
  - (+)Offer many additional features
    (GPS, stadiametric rangefinder, etc.)
  - (+)Connectivity to a smartphone, tablet, computer etc.
  - (-)High energy consumption
  - (-)Are bigger and bulkier
  - (-)Not so good image resolution than with analog devices

ADAPTERS FOR NIGHT VISION CLIP-ON´S





- To mount a clip-on device to a daytime optic, an adapter is needed which clamps directly on the objective or the ocular of the daytime optic
- With many clip-on devices such an adapter is included, for the most common outside diameters
- Some manufacturers include also additional plastic reduction rings, to fit even more optics on the market
- If the daytime optic has a different outside diameter then which is included, an aftermarket adapter is needed
- The most known aftermarket adapters which have a high-quality come from companies Rusan and Smartclip
- They feature a small micro-adjustment screw for the perfect fit on the optic
- Inside these adapters is also a protection tape
- Pulsar, for example, has a brand-specific mounting solution - these need a special adapter or a special reduction ring (converter) that fits the normal adapter


OPTICS
TRADE