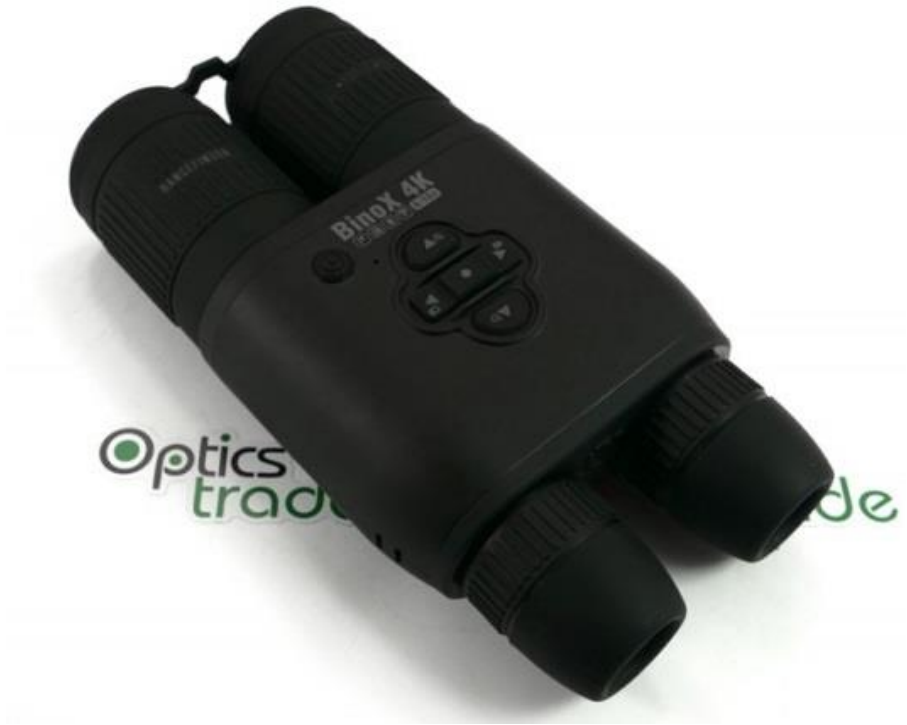
OPTICS TRADE

Night vision binoculars

April, 2020

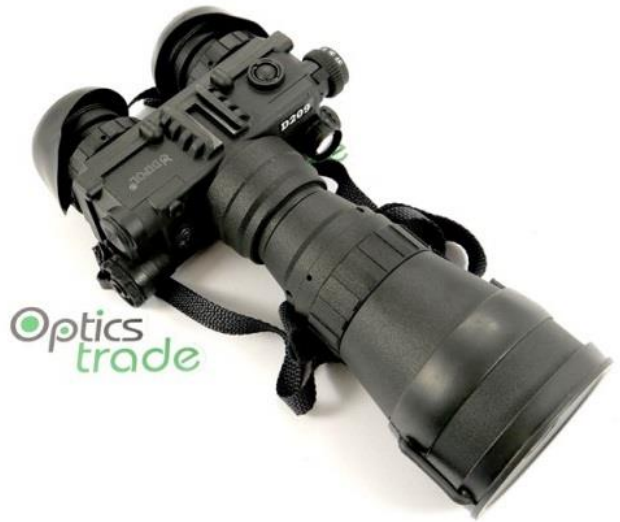
DIGITAL NIGHT VISION BINOCULARS

- NV binoculars are available as analog or digital devices
- Very popular among hunters
- Offer a intensified and magnified picture for night-time observations
- Available in different magnification
- Better performance than Gen. 1 NV binoculars
- Cheaper than Gen. 2 or Gen. 3 NV binoculars



ANALOG VS DIGITAL NIGHT VISION BINOCULARS

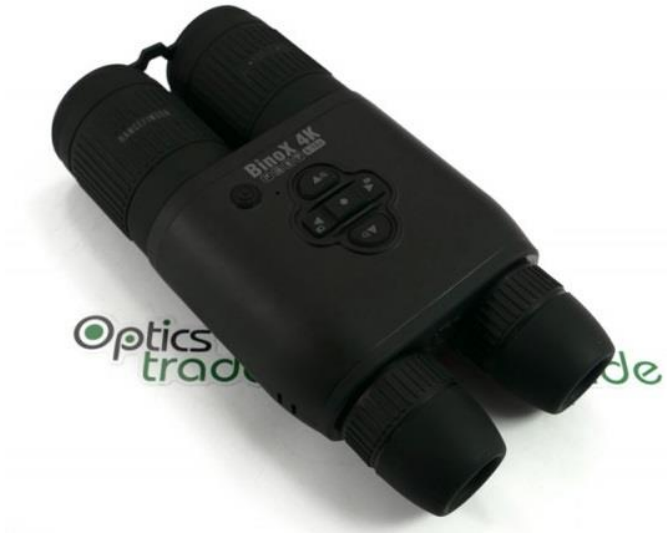
Pros and cons of each



- Analog night vision binoculars
  - (+)Available with IIT´s of all 3 generations
  - (+)Direct image with no screen – no refresh rate
  - (+)Longer observation distances at night
  - (+)Many NV goggles can be converted into NV binoculars
  - (+)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

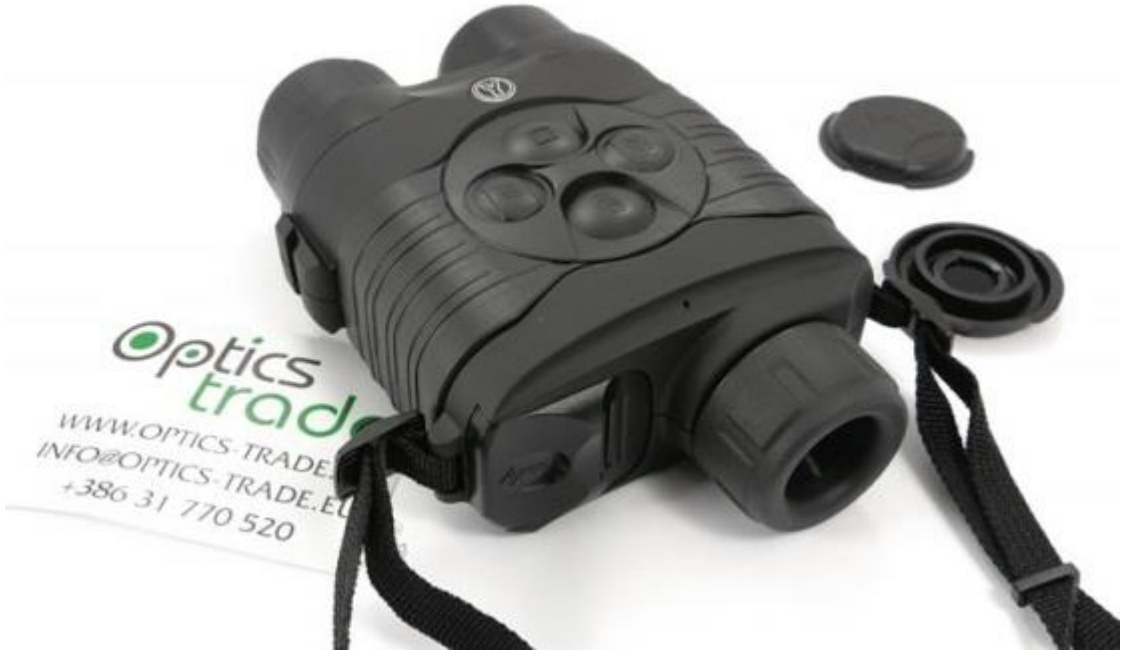
ANALOG VS DIGITAL NIGHT VISION BINOCULARS

- Digital night vision binoculars
  - (+)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.)
  - (-)High energy consumption
  - (-)Are bigger and bulkier
  - (-)Not so good image resolution than with analog devices



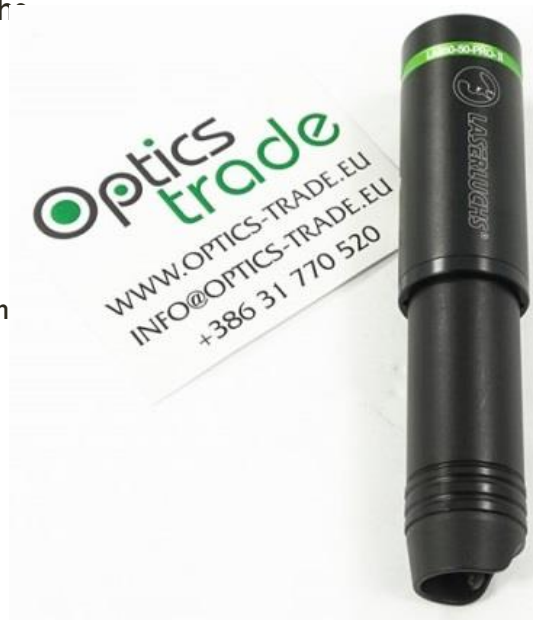
NV BINOCULARS VS NV SCOPES (NV MONOCULARS)

- Night vision Monoculars:
  - Smaller in size
  - Lighter weight
  - Cheaper
  - Easy to adjust
  - Not comfortable for longer time observations
- Night vision Binoculars
  - Much better viewing experience
  - More comfortable for longer time observations
  - Bigger and bulkier
  - Heavier in weight
  - More expensive
  - More difficult to adjust on both eyes



INFRARED ILLUMINATORS FOR DIGITAL NIGHT VISION BINOCULARS

- The human eye can see light wavelengths from 380 to 740 nanometers (visible light)
- Wavelengths beyond the visible spectrum are longer wavelengths and are called infrared wavelengths
- An infrared illuminator is a flashlight that emits light in an infrared spectrum
- IR illuminators are available in different wavelengths with LEDs or a Laser diode
- Different wavelengths are for different NV devices
  - Gen 1 NV can see wavelengths up to 760-780nm
  - Gen. 2 NV devices can detect wavelengths up to 850nm, and some special IIT´s can detect light even up to 900nm
  - Best Gen. 3 image intensifier tubes, like Photonis 4G, 4G+, and XR5, can detect wavelengths even up to 1000nm
  - Digital night vision devices can detect wavelengths up to 950nm
- When buying, you have to be cautious what is the maximal wavelength your night vision can detect
- Many animals can detect IR light up to 850nm
- For Digital NV binoculars, we recommend an IR illuminator between 900nm and 950nm
- Available with fixed power or adjustable power, and with fixed beam or adjustable beam



MULTIMEDIA AND CONNECTIVITY OF DIGITAL NIGHT VISION BINOCULARS

- Digital NV devices can take photos and videos
- Analog devices do not have this possibility
- Digital NV devices have an integrated storage, or a slot for a removable SD, or a Micro SD card
- These photos and videos can be transferred to a smartphone or a computer via a cable, or a special software that is provided by the manufacturer
- The most known software the Stream Vision app from Pulsar or Obsidian 4 app from ATN
- With these apps you can also adjusting the settings from your digital night vision or thermal imaging device, stream images and videos directly on your personal device, updating the firmware, controlling the optic remotely, etc.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