

# OPTICS TRADE

Analog night vision  
goggles

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# ANALOG NIGHT VISION DEVICES

- Mainly designed for the military
- Definition of night vision goggles - they can be mounted on a helmet, and be used without a need to hold them
- Small, lightweight, and compact
- Small objective lens
- Most known the ones with one objective lens
- With 2 objective lens are more expensive but feature a bigger field of view
- Available from many manufacturers – in different shapes and sizes
- Possible to aim through daytime rifle mounted optic



# NV GOGGLES MOST COMMON USE CASES

- Mostly used by the military, police, and other special forces
- All night vision goggles feature 1x magnification
- The user has true sense of distance
- Also used by pilots
- Possible to look documents, maps, and so on, or drive a car, etc. in complete darkness

# NV GOGGLES VS NV BINOCULARS

- Often feature the same housing
- The only difference is in the magnification
- NV goggles have true 1x magnification
- NV binoculars have a magnified picture (3x, 4x, 5x, etc.)
- NV goggles are widely used by professionals (Military, Police)



# 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



# NV GOOGLES VS HEAD-MOUNTED NV SCOPES WITH 1X MAGNIFICATION

## Pros and cons

- Night vision scopes (monoculars)
  - Both widely used by professionals
  - NV scopes (monoculars) are very small and offer a nice picture with a wide field of view
  - Not comfortable for longer time observations
  - Very small and lightweight
  - Cheaper than NV goggles



# NIGHT VISION DEVICES VS THERMAL DEVICES

## Night vision

- (+) Realistic image
  - (+) Better image quality at shorter ranges
  - (+) Better detail recognition at shorter ranges
  - (+) Cold objects are clearly visible
  - (+) Antlers can be perfectly evaluated
  - (+) Small energy consumption
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- (-) Animals behind dense vegetation are not visible
  - (-) More difficult to detect animals at all ranges
  - (-) At complete darkness, an additional IR illuminator is needed
  - (-) An IR illuminator under 850 nm can be visible to animals
  - (-) Can not see through heavy fog, rain or snow
  - (-) The flash from a firearm is longer noticeable (difficult to track animal after the shot)
  - (-) Not possible to take photos or videos

# NIGHT VISION DEVICES VS THERMAL DEVICES

## Thermal imaging

- (+) Easy detection of animals at all ranges
- (+) Animals easy to see behind dense vegetation
- (+) No additional IR illuminator needed
- (+) Can see through heavy fog, rain or snow
- (+) Flash from a firearm is almost not noticeable
- (+) Possibility to take photos or videos
- (-) Small cold objects in front of an animal are difficult to see (trenches, grass, etc.)
- (-) Details are not well visible
- (-) Antlers not well visible and almost not visible at bigger distances
- (-) Bigger energy consumption





# STANDARD HELMET MOUNTS FOR NV GOOGLES

- The helmet mount was standardized
- Deigned also for other accessories (Headlamps, cameras, etc.)
- For NV goggles mounting, also a intermediate folding part is needed
- The folding part ensures that the NVG perfectly fits to the eyes of the user



# COMMON FEATURES OF HEAD MOUNTS

- Head mounts are designed for people that use night vision goggles or monoculars but do not need to carry a helmet
- With a head mount, the NV device can also be folded upwards





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