OPTICS TRADE

8x42 Binoculars

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GENERAL FEATURES

- Binoculars with 8x magnification and a 42mm objective lens are the most popular binoculars on the market
- The most versatile among all binoculars
- Thanks to the 42mm objective lens, these binoculars offer a fairly brigh picture
- Much smaller and lighter in weight compared to low-light binoculars
- Most 8x42 binoculars are made with Schmidt/Pechan Roof prisms, but there are also some exceptions with integrated Abbe/Koenig prisms or even Porro prisms

MOST COMMON FIELDS OF USE

- Can be used for any application
- Widely used by hunters because of the low weight and compact size
- Very popular for bird watching
- The 8x magnification offers a wide field of view and a bright picture
- Due to the 8x magnification the shakiness of the hands is not as noticeable
- Since 8x42 binoculars are a lot smaller and lighter, many users take them also to hiking trips ans other activities
- Often such binoculars are also used for astronomy use

8X42 VS 10X42 BINOCULARS

- 8x42 and 10x42 binoculars are the biggest categories among all binoculars
- There is no manufacturers that do not offer at least one model in each category
- The user gets the best quality for their money

8x42 Binoculars

- Better choice for a novice user
- Much bigger field of view due to the smaller magnification, important for observing moving animals
- Bigger exit pupil (5.25 mm) for a brighter picture, so animals can be observed for a longer time

10x42 Binoculars

- Bigger magnification helps with better detail aand better resolution
- Designed for daytime use
- Used by expetrts which can compensate for the shakiness of the hands
- Smaller exit pupil (4.2mm), which is the main reason for darker images at dusk and dawn

8X56 VS 8X42 BINOCULARS

- 8x42 Binoculars
  - Mostly used, and the most universal binoculars on the market are 8x42
  - They can be used for hunting, hiking, traveling, and many more
  - These offer a solid bright picture but still packed into a smaller housing for easier transportation
  - Smaller weight, which is perfect for long trips
  - Bigger field of view
- 8x56 Binoculars
  - Do outperform all 8x42 binoculars when it comes to the observation time in dusk and dawn
  - Thanks to the bigger objective lens the 8x56 binoculars gather a lot more light, which results in a brighter picture in low-light situations
  - The exit pupil is 7 millimeters, which is the widest a human eye can detect. 8X42 binoculars, for comparison, have 5.25 millimeters exit pupil
  - Older people, whatsoever, cannot see any difference in the picture since the pupil of the human eye gets smaller with older years

8X42 VS 10X50 BINOCULARS

- 8x42 Binoculars
  - Bigger field of view
  - Smaller weight
  - Smaller size
- 10x50 Binoculars
  - Bigger and bulkier
  - Heavier in weight
  - Brighter picture in dusk and dawn

ROOF PRISM 8X42 BINOCULARS

- Schmidt Pechan prisms
  - Are produced all over the world
  - Easy to produce and are the most common prism type in binoculars
  - Very affordable, and the construction is small, lightweight, and compact
  - Compared to binoculars with Abbe Koenig prisms with the same magnification and objective lens size, the binoculars with Schmidt Pechan prisms are shorter in length.
  - Easy handling and the ergonomics are very good
  - Binoculars with Schmidt Pechan prisms are waterproof, but the light transmission rate is lower compared to Abbe Koenig prisms
- Abbe Koenig prisms
  - Are very common in high-quality binoculars, produced from the most known companies in this industry
  - Difficult to produce, and only 6 manufacturers worldwide produce Abbe Koenig prisms: Zeiss, Noblex, Swarovski, Leupold, Sig Sauer, and Optolyth
  - Binoculars with integrated Abbe Koenig prisms are longer but offer better light transmission
  - The ergonomics are very good, and all Abbe-Koenig prisms are waterproof
  - Abbe Koenig prisms are mostly built-in low-light binoculars in the configurations of 8x56 and 10x56. Also other configurations are available with such prisms, but the selection is narrow

PORRO PRISM 8X42 BINOCULARS

- Binoculars with Porro prisms in the construction were the first type of binoculars on the market
- This traditional arrangement of binoculars provided by Porro-prisms makes objective lenses further apart and thus offering a higher light transmission rate
- Images are not only brighter and sharper but also have a better depth of field, offering realistic 3D images and a wider field of view
- Many Porro prism binoculars have also the focusing mechanism separated for each eye, which can be very useful in low-light situations
- Less expensive
- the wider design makes them heavier and difficult to hold in hands and they are less watertight and also less rugged, providing a less secure grip
- lack of adjustable eyepieces, which in most cases leads to problems when using the binoculars with glasses
- Porro prism binoculars in the configuration of 8x56 are very rare, but one of the best low-light binoculars comes from this configuration – Steiner Nighthunter 8x56

FEATURES OF PORRO PRISM BINOCULARS

- (+) Higher transmission rate
- (+) Better depth of view perception
- (+) Wider field of view
- (+) Reallistic 3D images
- (+) Lower price for high-end binoculars
- (-) Heavy and clumsy
- (-) Less watertight
- (-) No eye-relief adjustment

DIOPTER SETTING SYSTEM ON 8X42 BINOCULARS

- Since the most 8x42 binoculars are made of Schmidt Pechan or Abbe-Koenig prisms, the most common diopter setting can be found on one of the barrels
- Some exceptions feature the diopter setting on both barrels
- Some that have the diopter setting integrated into the focusing system
- No matter where the diopter setting is located, some binoculars feature a non-locking and some a locking function for the diopter adjustment wheel

LENS COATING ON 8X42 BINOCULARS

- The coating of lenses is one of the most important processes in the manufacturing of optics
- There are 4 different types of how, and how many times the coatings are applied on the lenses: Coated, Fully Coated, Multi-Coated, and Fully Multi-Coated
  - ″Coated″, it means that there is only a single layer of anti-reflection coating on some of the lenses. Usually, only the objective lens and the eye-piece lenses are coated, and usually only on the outside
  - ″Fully Coated″ lenses mean that all air to glass surfaces have one layer of coating
  - ″Multi-Coated″ means that some lenses have multiple layers of anti-reflection coatings
  - ″Fully Multi-Coated″ means that all air to glass surfaces are coated with anti-reflection coatings, with multiple layers
- Since lens coatings are very important for the light transmission, low-light binoculars must feature Fully Multi-Coated lenses. This ensures the best light transmittance, and the brightest images in late hours

- Many manufacturers apply additional coatings such as anti-fog coatings, scratch-resistant coatings, and water repellent coatings

BEST 8X42 BINOCULARS

- The best 8x42 binoculars come from the biggest names in this industry – Zeiss, Leica, and Swarovski
- The quality of their prodducts is at the highest level, as we would expect from such expensive products
- If we compare the products from the same price, all binoculars are equal in quality, each with its pros and cons
- 8x42 binoculars are also available with an integrated laser range finder
  - **From Leica the Geovid**
  - **From Zeiss the Victory LR**
  - **From Swarovski the EL-Range**


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