OPTICS TRADE

8x56 Binoculars

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GENERAL FEATURES

- 8x56 Binoculars are the most common low-light binoculars on the market
- The exit pupil is 7mm, which is the widest a human eye can detect
- Lenses with very high transmission rates for the brightest pictures
- Low-light binoculars are made only with Porro prism or Abbe Koenig prism system because they offer the best transmission rate, with least losses
- Due to the big objective lens, these binoculars are big and bulky and are known for the heavy weight

MOST COMMON FIELDS OF USE

- Mostly used by hunters
- Popular for raised hide hunting deep into the night
- With high-quality low-light binoculars, animals can be spotted even after they cannot be detected anymore with naked eyes
- Often such binoculars are also used for astronomy use because of the bright picture
- Due to the heavier weight and bigger construction, users often use these binoculars fixed on a tripod

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

8X56 VS 7X50 BINOCULARS

- 7x50 Binoculars
  - In the 7x50 category, the majority of binoculars have a Porro-prism design
  - There are only a few exceptions, with Roof – Schmidt/Pechan prisms
  - One of the most known binoculars with a 7x50 configuration are still the Steiner Commander, which are known for exceptional low-light performance.
  - Due to the smaller magnification of 7x50 binoculars, they offer a much wider field of view, and the shakiness of the hands is not as noticeable
  - Even though the exit pupil is in both binocular types 7 millimeters, you still get a slightly brighter picture with 8x56 binoculars because of the bigger objective lens, which helps to gather more light.
  - 7x50 type of binoculars are often used at the sea since 7x magnification is the biggest magnification that can be used on a boat. With bigger magnifications, the user can quickly get seasickness.

ROOF PRISM 8X56 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 8X56 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 8X56 BINOCULARS

- Since the most 8x56 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 8X56 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, 8x56 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 8X56 BINOCULARS

- One of the best binoculars in this configuration are the **Steiner Nighthunter 8x56** binoculars
  - They feature more than 96% of light transmission, thanks to the Porro prism lens system and superior coatings
- Also **Swarovski SLC 8x56** and **Zeiss Victory HT 8x54** are top-of-the-line low-light binoculars, thanks to the Abbe-Koenig prism system
- 8x56 binoculars are also available with an integrated laser range finder
  - The most known model comes from **Leica** with their **Geovid 8x56** models, but also **Zeiss** offers LRF low-light binoculars, the **Victory RF 8x54**

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