

BINOCULAR TERMINOLOGY

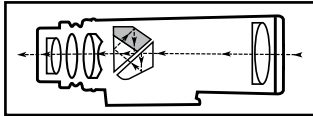
Binoculars are available in a wide variety of sizes, powers and features for different usage and purposes. A binocular consists of two optical systems that are connected by a hinge sharing a common focus system. By using a binocular, an image can be projected simultaneously for both eyes providing a realistic perception of depth.

PRISM SYSTEM/TYPE

The prism system of a binocular reduces the size of a long optical path and correct an inverted image. There are three most common types of prism construction.

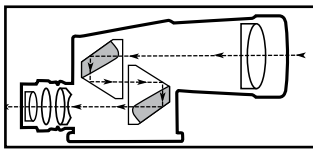
Roof Prism System

The prisms overlap and are aligned in a straight line with the lenses allowing to have a slim construction.



Porro Prism System

The objective is offset from the eyepiece offering greater depth perception and a wider field of view.



Reverse Porro System

The objectives are offset from the eyepiece in a horizontal way reducing the total size of the construction by about 30% compared to the traditional porro prism system.

PRISM GLASS

The common standards of optical prisms are barium-crown (BAK-4) glass or borosilicate (BK-7) glass. The BAK-4 is a higher quality glass that reduces light scattering, resulting in sharper and brighter images.

MAGNIFICATION (POWER)

Magnification is the number of times the object being viewed is enlarged. Binoculars are often identified by two numbers, for example: 10x50. The first number indicates the magnification or the power of the binocular, expressed by the letter "x", for times. This means that the object being viewed appears to be 10 times closer than would be seen with the naked eye.



OBJECTIVE LENS DIAMETER

The second number in the reference (i.e. 10x50) indicates the diameter of the objective lens or the front lens. The larger the objective lens, the better the light transmission, thus the brighter the image.

BINOCULAR FEATURES

Wide Angle

Binoculars with a wider field of view. This wide-angle feature is better for capturing action or fast sports.

Zoom

Zoom binoculars have variable powers of magnification allowing you to view closer in the distance without changing binoculars.

WATERPROOF/FOGPROOF

Waterproof binoculars are O-ring sealed for waterproof protection to keep dry inside after immersion in water. Some binoculars are also fogproof which means that they are nitrogen-purged to prevent anti-fogging inside the optical surfaces.

OPTICAL COATINGS

Various coating processes on the lenses and prisms will determine the brightness and the light gathering of a binocular, providing higher contrast and brighter images. The different types of coating are:

Coated – A single layer on at least one lens surface

Fully Coated – A single layer on all air-to-glass lens surfaces

Multi-Coated – Multiple layers on at least one lens surface

Fully Multi-Coated – Multiple layers on all air-to-glass surfaces

FIELD OF VIEW (F.O.V)

This is the side-to-side linear measurement of the of the circular field seen through a binocular. It is defined by the width in feet of the area visible at 1000 yards, or in meters at 1000m. The higher the magnification, the narrower the field of view.

CLOSE FOCUS DISTANCE

The closest distance to the observed object that the binoculars can be used while retaining a sharp focus.

RESOLUTION

The measurement of the binocular's ability to distinguish fine detail and sharpness.

EXIT PUPIL

This refers to the size of the small disc of light visible at the eyepiece of a binocular. To determine the size of the exit pupil, divide the objective diameter by the power: For example, a 10x50 binocular will have an exit pupil of 5mm

EYE RELIEF

This is the distance a binocular can be held away from the human eye and can still observe the entire field of view. Long Eye Relief (LER) reduces eyestrain and is more comfortable for eyeglass wearers.

FOCUS SYSTEM

The mechanism that is used to focus both barrels of a binocular on the object being viewed. They are normally three types of focus systems.

Center Focus – Where the focusing knob is located in the center of the binocular

Individual Focus – Where the focusing knob is located individually in each eyepiece

Fixed focus – No focusing required

DIOPTR ADJUSTMENT

A ring adjustment for fine-focusing which is usually provided around one eyepiece. This allows to compensate for vision difference between the right and left eye.



Rubber fold-down



Twist-up

EYECUPS

The most common eyecups are twist-up, pop-up, or rubber fold-down.

BINOCULAR LIMITED LIFETIME WARRANTY

(Within USA and Canada only)

This warranty does not cover consumer-caused damages, abuse, normal wear-and-tear, unauthorized repairs or modifications. For further detailed information, please refer to the warranty policy enclosed with products.