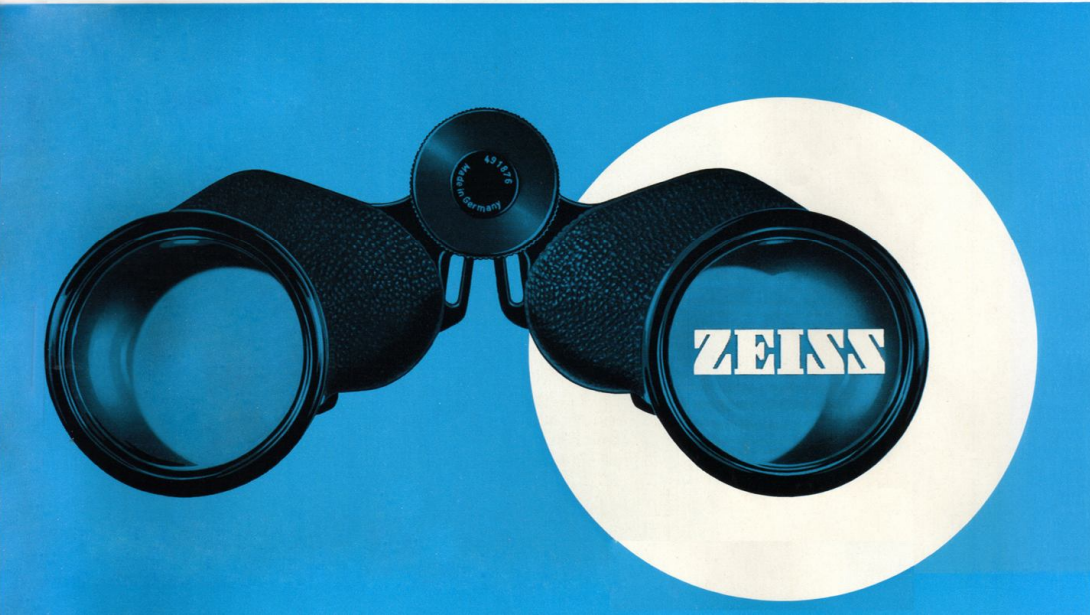
CARL ZEISS

Binoculars



ZEISS Binoculars are world-famous

In every part of the world, you will find ZEISS Binoculars in the hands of discriminating users. The secret of their renown? The unrivalled precision of ZEISS optical and mechanical components.

Even seventy years ago, when the first ZEISS Binoculars were built, precision craftsmanship was the order of the day. And all the world knows: You can rely on a ZEISS Binocular; it incorporates in the highest measure the latest achievements of modern science and technology.

Here are the most outstanding characteristics of ZEISS Binoculars:

Excellent image quality

as a result of newly computed eyepieces.

Long life

due to use of corrosion-resistant metals. The patented sealing system guarantees that even central-focusing models are dust- and water-proof.

Small and handy

owing to use of patented tele-objectives, and in the 8 x 30 B DIALYT because of an entirely new prism system.

Milestones of binocular design in the ZEISS factory:

1894

ZEISS starts series production of the prism binoculars developed by Prof. Ernst Abbe.

1917

ZEISS introduces binoculars with wide-angle eyepieces.

1930

ZEISS replaces brass and zinc components by light-metal parts.

1935

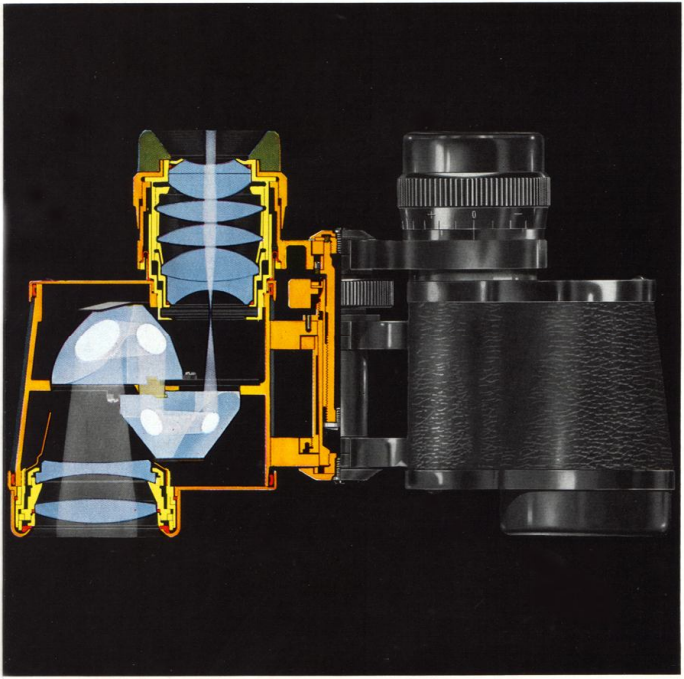
ZEISS invents the anti-reflection T-coating (eliminating reflection at air-glass surfaces). As a consequence, the light transmission of binoculars is increased about 50 %.

1954

The use of tele-objective systems – consisting of two air-spaced lens elements – reduces the overall size of ZEISS Binoculars and produces a higher-quality image for a larger aperture ratio.

1958

ZEISS introduces the first B-type binocular giving a maximum field of view to spectacle wearers.



Cross section through the 8 x 30 ZEISS Binocular

The importance of telescope performance

A binocular is intended to show us more than we can see with the naked eye. This increase in visual power is called telescope performance; it is different in daylight and in twilight.

In **daylight,** telescope performance is practically identical with telescope magnification. If binoculars are to be used only during the daytime the observer may therefore choose maximum power irrespective of the objective-lens diameter. The 8-power binocular has been generally accepted for hand-held use. Due to unsteadiness of the hand, a magnification of 10 times is the upper limit for observation without a tripod.

Telescope performance in **twilight** is a function of the magnifying power (M) **and** the objective-lens diameter (D). The figures for "M x D" will be found engraved on the binocular (for example, "8 x 30").

The telescope performance in dim light is defined by the term "twilight performance"* $Z = \sqrt{M \cdot D}$. This is indicated for each of the models described in this folder. The higher the twilight performance, the more details will be recognized at dim light conditions.

* Formerly, the square of the diameter of the exit pupil, the so-called "geometrical transmission factor of the telescope" which is a measure of image brightness, was also used as a measure of telescope performance in dim light. It has, however, proved to be an unsuitable indication of twilight performance.

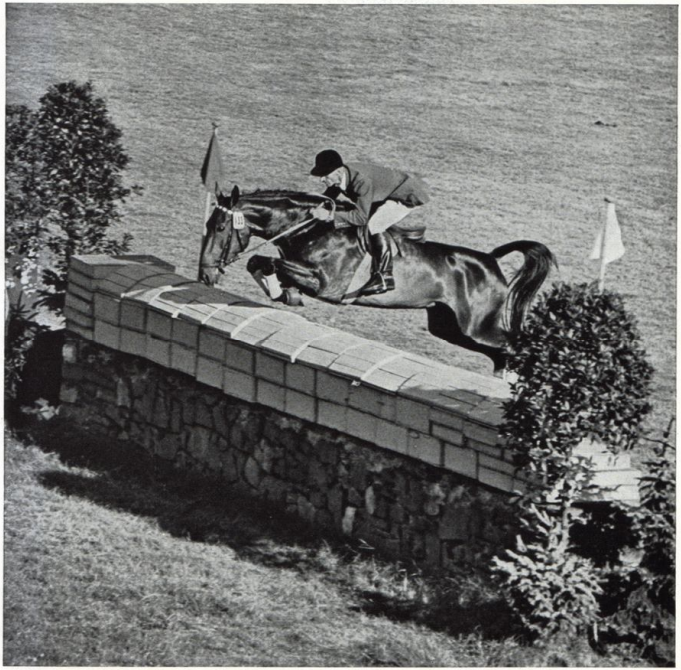


ZEISS
Central-focusing Binocular
8 x 30



This is the popular all-purpose model. Its 8x magnification and its excellent performance both in daylight and in twilight make it the perfect companion for travel, sports and wild-life studies. It is also a great favorite among hunters. The new, six-element wide-angle eyepiece is extraordinarily efficient and permits full use of the wide field of view.

Magnification (M)	8 times
Objective diameter (D)	30 mm
Exit pupil (P)	3.75 mm
Twilight performance (Z)	15.5
Field of view	150 yds. at 1,000 yds. 8° 30'
Weight	19½ ounces
Height	3.7 inches
Width	6.5 inches



ZEISS
Central-focusing Binocular
8 x 30 B

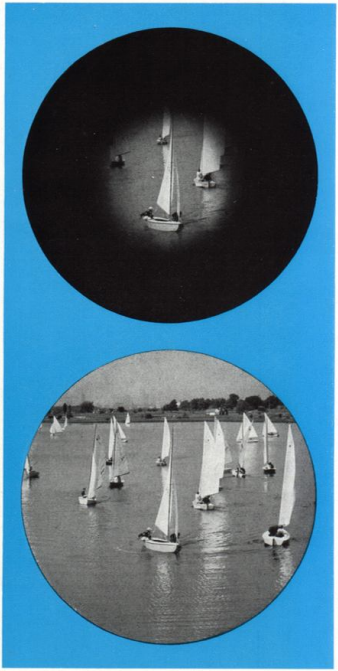
also suitable for spectacle wearers

The wearers of spectacles were formerly at a considerable disadvantage. Apart from the inconvenience caused by the constant need to remove spectacles to use the binocular, it was quite impossible to correct astigmatism without corrective lenses specially made to order for the user. Without such lenses, however, the astigmatic person would find his sharpness of view impaired.

With the 8 x 30 B these drawbacks are eliminated. This was made possible by increasing the distance between exit pupil and eye lens vertex.

Reversible, soft rubber eyecups were added to the "B" binoculars which, when extended, position the eyepieces at the proper distance from the eye when no spectacles are worn.

With a conventional binocular, the spectacle wearer will see only a small portion of the visual field (fig. top), while a B-type binocular gives maximum field of view (fig. bottom)





Magnification (M)	8 times
Objective diameter (D)	30 mm
Exit pupil (P)	3.75 mm
Twilight performance (Z)	15.5
Field of view	110 yds. at 1,000 yds. 6° 18′
Weight	18½ ounces
Height	4 inches
Width	6.5 inches

ZEISS
Central-focusing Binocular
8 x 30 B DIALYT
also suitable for spectacle wearers



A new prism system is the outstanding feature of this ZEISS Binocular with its elegant, slender form. Like all the other ZEISS Binoculars marked "B", it may be used with the naked eye or with spectacles. For normal observation without eyeglasses, the reversible eyecups are turned up to ensure perfect vision.

Magnification (M)	8 times
Objective diameter (D)	30 mm
Exit pupil (P)	3.75 mm
Twilight performance (Z)	15.5
Field of view	130 yds. at 1,000 yds. 7° 24'
Weight	23 ounces
Height	5.3 inches
Width	4.2 inches

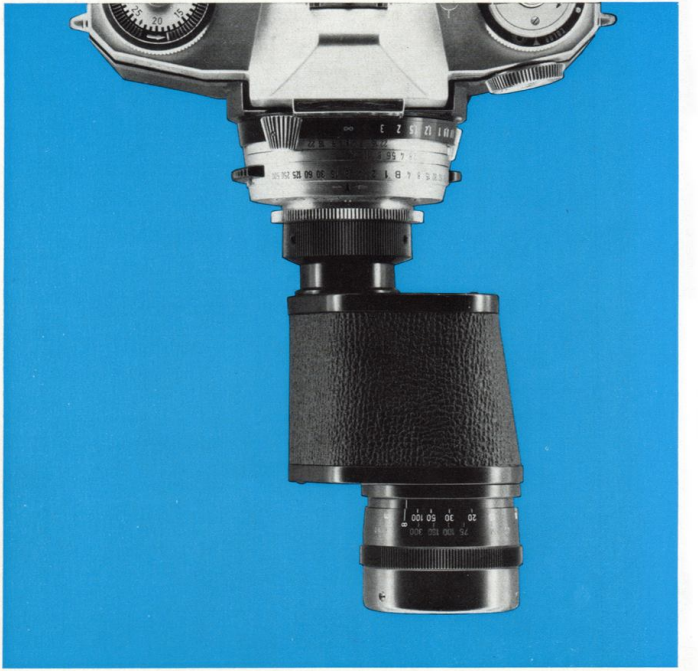


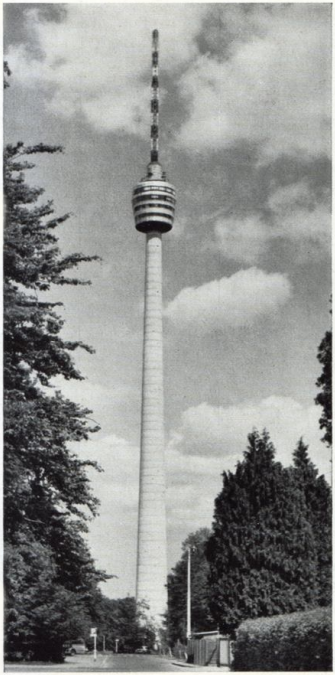
ZEISS Prism Monocular (telephoto attachment) 8 x 30 B

The 8 x 30 B Monocular can be used as a telephoto attachment for single-lens reflex cameras (ZEISS IKON Contaflex and Contarex). It will extend the focal length of the camera's 50 mm. standard lens to 400 mm. However, the 8 x 30 B Prism Monocular is also highly valued as a spotting telescope.

Due to its light weight, it is particularly suitable for mountaineering. With the aid of supplementary lenses, it can be converted into a telescopic magnifier offering a far greater working distance than ordinary magnifiers.

Magnification (M)	8 times
Objective diameter (D)	30 mm
Exit pupil (P)	3.75 mm
Twilight performance (Z)	15.5
Field of view	110 yds. at 1,000 yds. 6° 18'
Weight	9 ounces
Height	4.7 inches
Width	2.6 inches







Two photos taken from the same distance:
With the normal-angle standard lens (50 mm) and with the 8 x 30 B photo monocular (= 400 mm focal length).


WARPLETH



ZEISS 7 x 50 B Binocular with individual eyepiece focusing

also suitable for spectacle wearers

This binocular has an extremely large exit pupil. It is traditionally a seaman's glass, because even when riding a rough sea there will be no difficulty in aligning the eye pupil with the extra-large exit pupil of this binocular. It is therefore widely used on fishing vessels and pilot boats, for coastal shipping and yachting. A special rubber armor is available as an accessory for protecting the glass against unusually rough handling.

Due to specially computed eyepieces and reversible eyecups, this binocular offers a field of view of 130 meters at a distance of 1000 meters both with and without spectacles.

Magnification (M)	7 times
Objective diameter (D)	50 mm
Exit pupil (P)	7.1 mm
Twilight performance (Z)	18.7
Field of view	130 yds. at 1,000 yds. 7° 24'
Weight	35 ounces
Height	5 inches
Width	7.8 inches





ZEISS
Central-focusing Binocular
8 x 50 B
also suitable for spectacle wearers

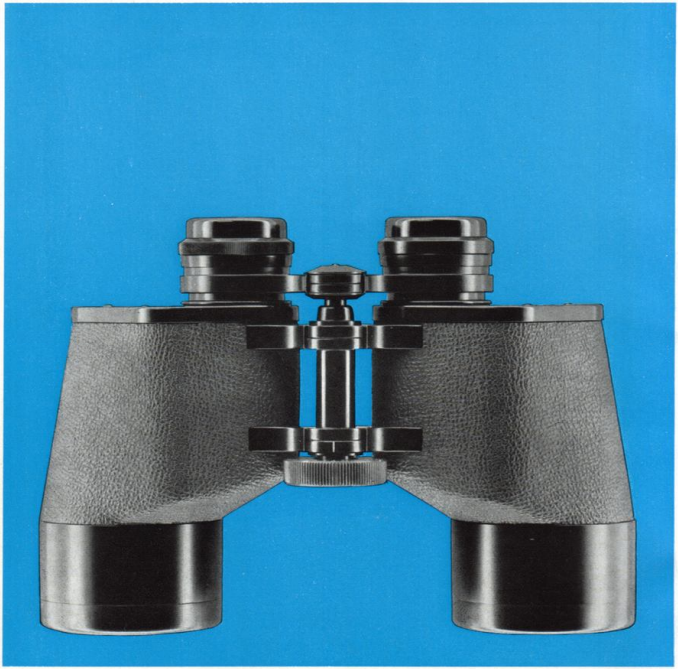
This standard binocular for daylight and twilight use has been improved, so that it gives maximum field of view also to the spectacle wearer. Again, reversible rubber eyecups are provided which are left upright for observation with the naked eye. In spite of its higher magnifying power and higher twilight performance, this binocular gives the same field of view as the 7 x 50 B model. This is the secret of its unusual popularity, particularly with hunters.

Magnification (M)	8 times
Objective diameter (D)	50 mm
Exit pupil (P)	6.25 mm
Twilight performance (Z)	20.0
Field of view	130 yds. at 1,000 yds. 7° 24'
Weight	38 ounces
Height	5.3 inches
Width	7.8 inches

ZEISS
Central-focusing Binocular
10 x 50

A high-performance glass specially suited for observing objects difficult to discern in daylight or twilight. The outstanding innovation on this glass is the use of a so-called semi-apochromatic objective for maximum color correction. This explains the unrivalled image quality obtained with this binocular in spite of its high 10 x magnification. The ZEISS 10 x 50 Binocular is ideally suited for horse racing, for the hunter, the ornithologist, for air traffic control, marine and alpine rescue services – in short for all those purposes where high magnifying power is required for hand observation.

Magnification (M)	10 times
Objective diameter (D)	50 mm
Exit pupil (P)	5 mm
Twilight performance (Z)	22.4
Field of view	130 yds. at 1,000 yds. 7° 24'
Weight	37 ounces
Height	5.3 inches
Width	7.8 inches





ZEISS
Central-focusing Binocular
15 x 60

The field glass combining 15x magnification with excellent twilight performance. As in the 10 x 50 model, a semi-apochromatic objective system is used for maximum correction of chromatic aberrations. The range of application of this binocular is essentially the same as that of the 10 x 50 model. In addition, this glass is indicated for use on coast-guard stations, for supervising large building sites, in the construction of bridges, for research purposes and for amateur astronomers. In order to make full use of the advantage offered by the high magnifying power, a tripod is highly recommended. An adapter which will fit any conventional camera tripod is available.

Magnification (M)	15 times
Objective diameter (D)	60 mm
Exit pupil (P)	4 mm
Twilight performance (Z)	30.0
Field of view	80 yds. at 1,000 yds. 4° 30'
Weight	45 ounces
Height	7.1 inches
Width	8.3 inches

Summary

8 x 30 and 8 x 30 B

the conventional field glasses for the discriminating user.

8 x 30 B DIALYT

the streamlined prism binocular for travel and sports.

8 x 30 B Monocular

telephoto attachment for Contaflex and Contarex cameras and spotting telescope.

7 x 50 B and 8 x 50 B

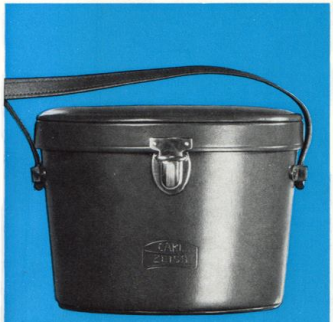
for improved observation in poor light and at low visibility.

10 x 50 and 15 x 60

high-performance glasses of maximum magnification for daylight and twilight use.

Model	8 x 30	8 x 30 B	8 x 30 B DIALYT	mon. 8 x 30 B	7 x 50 B	8 x 50 B	10 x 50	15 x 60
Magnification (M)	8 times	8 times	8 times	8 times	7 times	8 times	10 times	15 times
Objective diameter (D)	30 mm	30 mm	30 mm	30 mm	50 mm	50 mm	50 mm	60 mm
Exit pupil (P)	3.75 mm	3.75 mm	3.75 mm	3.75 mm	7.1 mm	6.25 mm	5 mm	4 mm
Twilight performance (Z)	15.5	15.5	15.5	15.5	18.7	20.0	22.4	30.0
Field of view at 1,000 yds.	150 yds.	110 yds.	130 yds.	110 yds.	130 yds.	130 yds.	130 yds.	80 yds.
Weight	19½ oz.	18½ oz.	23 oz.	9 oz.	35 oz.	38 oz.	37 oz.	45 oz.
Height	3.7 ins.	4 ins.	5.3 ins.	4.7 ins.	5 ins.	5.3 ins.	5.3 ins.	7.1 ins.
Width	6.5 ins.	6.5 ins.	4.2 ins.	2.6 ins.	7.8 ins.	7.8 ins.	7.8 ins.	8.3 ins.

Every ZEISS Binocular is supplied with a detailed instruction booklet.



1



2



3



4

Accessories for ZEISS field glasses

1 Case "N" for all ZEISS Binoculars except 8 x 30 B DIALYT.

2 Flat case "F" additionally available for 8 x 30 und 8 x 30 B only.

3 Case "D" for 8 x 30 B DIALYT.

4 Case for 8 x 30 B Monoculars.

Rain guards

will protect the eyepieces of your binocular against rain and dust. If you also want to leave rain guard on your 8x30 or 8x30B in its leather case, you should choose the flat model "F"; these glasses will not fit into the standard case "N" with the rain guard in place. Other models for the N (or D) case with rain guard in place.

Button anchor straps

permit the glass to be buttoned onto your coat, etc., thus preventing it from swinging to and fro.

Corrective lenses in slip-on mounts

should be used by those with astigmatic eyes.

UMBRAL lenses

protect your eyes against glare.

Dark filters

permit observation of the sun's surface.

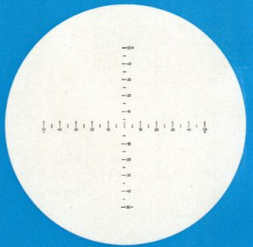
Polarizing screens

serve to eliminate the glare from reflecting surfaces.





Graticule F 1



Graticule F 2





Graticules

to facilitate the estimation of distances can be installed in any ZEISS field glass except the 8 x 30 B and the DIALYT.

Rubber armor

will protect the binocular against rough handling. A complete armor is available for the 7x 50 B model, while rubber guards can be used on the 8 x 50 B and 10 x 50 glasses.

Tripod adapters

fit any conventional camera tripod and are recommended for prolonged observation from one point, particularly with high-power field glasses.

Close-up lenses

convert the 8 x 30 or the 8 x 30 B Binocular into a telescopic magnifier. At a viewing distance of 1 m to 12 m, magnification ranges from 8 to 19 times. These close-up lenses are suitable for monocular use only. In conjunction with the 8 x 30 B prism monocular, they permit close-up photographs of high magnification.



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