Thomas Jupa

Brilliant far-seeing views with Leica binoculars

Wherever you are traveling, Leica binoculars bring you fascinating visual experiences. Whether you are in a theater or on a trip, whether you are bird-watching or hunting, in the mountains or on the high seas: we have the right far-seeing solution.

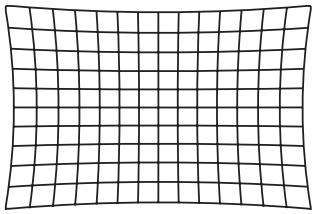
It is not only for photographing your subject and for reproducing its image that we resolutely abide by the fundamental Leica principle of providing our clients with the highest optical performance together with durable precision mechanisms – we apply the same principle to our products for observation.

The high quality of the optics, which are the heart of every Leica binocular, is the result of the confluence of many measures that were coordinated with one another.

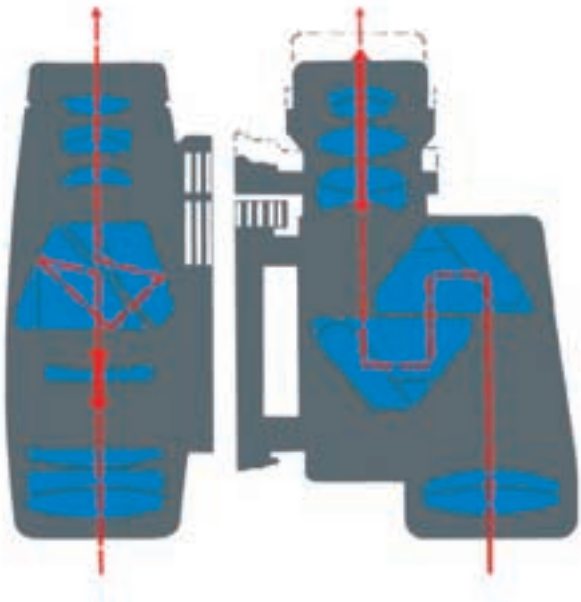
The types of optical glass that we use are not chosen just for the best suitability for the correction of aberrations, but also for maximum light transmission and neutral color rendition.

Other building blocks on the path to razor-sharp, bright and crisp images are sophisticated optical computations, glass fabrication with extremely tight tolerances, precise manufacturing, complex ion-aided multiple coatings and laser-assisted centering.

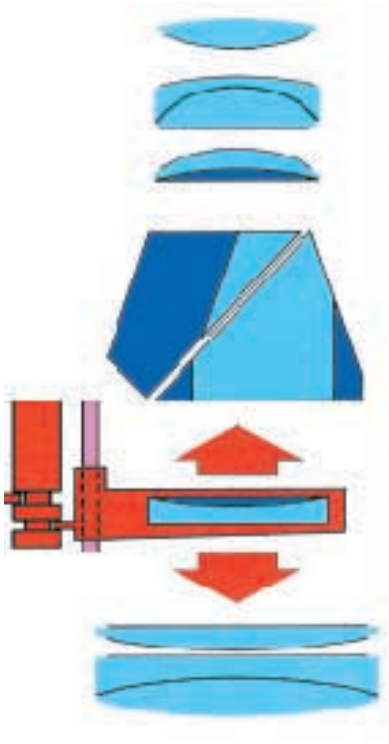
The heart of the optics in any Leica binocular are the roof prisms. They make the compact design possible, but they do require especially high-grade materials and extremely precise fabrication technologies. As an example, the Leica quality assurance specifications require the 90-degree angle on the prism to be accurate to one second of a degree. If we were to enlarge the prism to a scale that would yield an edge length of 100 meters (328 feet), the maximum permissible deviation would be no greater than 1 millimeter (just over 1/32")! And the "roof surfaces" of the prism are coated with a layer of so-called P40 material, with which Leica compensates the optical wave effects of phase shifts of light-rays. This improves the resolution of fine details and contrast rendition even further. And here is another example of Leica optics in the service of the user: in order to give the viewer a natural impression of the view when the binocular is turned



Creates a natural pictorial impression when a binocular is panned across a scene: pin-cushion correction in the optical system of Leica binoculars.



from side to side, for instance in sweeping an area for wildlife, all binoculars are designed with a slight pin-cushion distortion. If you sweep the landscape with a fully distortion-free binocular, you will get the impression that you are looking at a rotating globe. This perception-based "globe effect" is prevented by a precisely compensating correction. You should test the results of all these efforts towards optical brilliance yourself. How remarkably realistic a distant subject looks when it is drawn closer with a Leica binocular. How distinctly the finest structures and color nuances are differentiated. And how clearly all the details can be discerned, even under unfavorable light conditions.



It guaranties protection against air dampness, thus ensuring long-lived, accurate functionality: the true internal focusing mechanism of Leica binoculars.

Numbers that speak for Leica

Some performance characteristics of a binocular can only be determined with reference to the fabrication techniques of the optical elements. Others are expressed in terms of established parameters. The latter also suggest the fields of application for which the binocular is suitable.

Binocular designations usually include two numbers. For example: LEICA TRINOVID 10 x 42 BA.

Front lens diameter and magnification

The number "10" represents the magnification factor. Therefore, with the TRINOVID 10 x 42 BA you see an object 10 times larger or 10 times closer than you would see it with your bare eyes. The number "42" in our example, indicates the diameter of the front lens in millimeters. Since the size of the front element determines how much light can pass through the binocular, it is a decisive characteristic for the performance of the binocular in twilight.

A criterion for applications in poor light: the diameter of the exit pupil (top left). Decisive for the performance of a binocular: Front lens diameter (bottom left).

Exit pupil

When you look at the eyepiece of a binocular from a short distance, you will see a small bright circular area: the so-called "exit pupil". The larger its diameter, the brighter will an image appear in twilight. On the TRINOVID 10 x 42 BA in our example, its diameter is 4.2 mm. A large exit pupil also makes it

easier to keep an object in view when you are standing on unsteady ground, for instance on a swaying sailboat. On Leica binoculars, a considerable optical design effort has been made to position the exit pupils back far enough so that wearers of eyeglasses too, can enjoy a full field of view.

Twilight factor

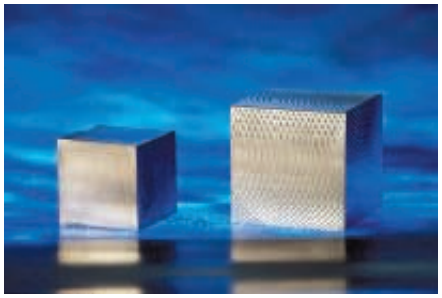
The so-called twilight factor is an indication of how well a binocular will perform in poor light. The higher this number, the better you can still discern fine details in twilight. The twilight factor can be calculated by taking the square root of the product of the magnification factor and the front lens diameter. In our example, this turns out to be a very high twilight factor of 20.5. The highest twilight factor of any Leica binocular is that of the TRINOVID 12 x 50 BA, which is 24.5 – an extremely high twilight factor. In addition to this purely mathematical value, the more thoroughly the optical system of a binocular has been corrected, and the higher the quality of its coatings, the better will be its detail rendition in poor light conditions. That is why the superb performance characteristics of Leica binoculars stand out, not only in bright daylight, but especially at twilight.

Example: TRINOVID 10 x 42 BA

Magnification = 10x; Front lens diameter = 42 mm

$$\text{Exit pupil} = \frac{\text{Front lens diameter}}{\text{Magnification}} = 4.2 \text{ mm}$$

$$\text{Twilight factor} = \frac{}{\sqrt{\text{Front lens diameter} \times \text{Magnification factor}}} = 20.5$$



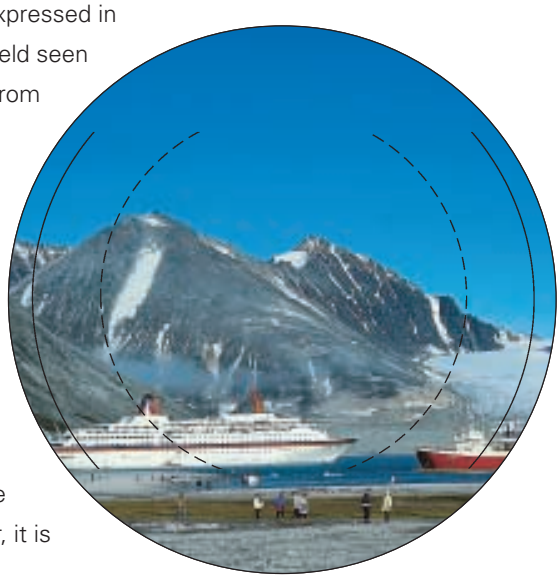
Approximately 65% lighter than steel: a weighty argument in favor of aluminum as the raw material for Leica binocular housings.

Important interior optics and mechanisms are securely protected: special sealing elements make Leica binoculars and spotting scopes impervious to water pressure.

Withstands a great deal of harsh use: the handy polyurethane armoring.

Field of view

Another important factor in the evaluation of the characteristics of a binocular is its field of view. It is usually expressed in terms of the width of the field seen with a particular binocular from a distance of 1000 meters (or 1000 yards). The smaller the magnification factor, the larger the field of view, generally. With the TRINOVID 10 x 42, for instance, the field of view is 110 meters at 1000 meters (or 110 yards at 1000 yards), but with the TRINOVID 8 x 42, however, it is 130 meters (or 130 yards).



Perfect form for perfect viewing

Rigorously selected raw materials and the highest mechanical precision ensure flawless, reliable function of your Leica binoculars for many decades to come. Even under the harshest conditions. And their ingenious ease of handling make their use extremely comfortable.

A major effort was made in the design of the eyepieces of Leica binoculars to ensure that eyeglass wearers can also enjoy the full field of view.

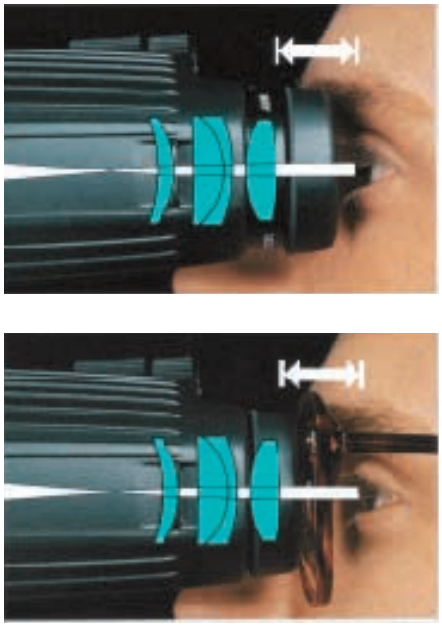
Another Leica development: the extremely precise guide channel for the focusing lens.

Robust and watertight

A rigid all-metal housing effectively protects the superb interior components of Leica binoculars. They remain in accurate shape, even under extremely harsh use. And continuously so. There is a solid reason for the 30-year guarantee that is granted for every TRINOVID binocular. To seal even the tiniest pores in the housings and to protect the valuable optics and mechanisms inside from dust and humidity, the bodies of the 32, 42 and 50 series of binoculars are impregnated in a process that lasts several hours. Sealing elements that were originally developed for air- and space travel then complete the procedure, making the interior 100% airtight.

True internal focusing

In order for the helical mounts to work smoothly, even under great temperature fluctuations, they are fabricated exclusively of aluminum and brass. An ideal combination of materials that makes lubricants virtually unnecessary and thus provides uniform and silky smooth movement during focusing. With true Leica internal focusing, only one lens in each half of the binocular is shifted for focusing. Nothing is shifted on the exterior surfaces of the binocular. Since there are no external guiding



Whether or not you wear eyeglasses, thanks to the practical sliding eyecups, your eyes are always at the right distance from the ocular.

Without eyeglasses: the extended eyecups shield the eyes from stray light. With eyeglasses: push in the eyecups, and the eyeglass lenses can move close to the ocular.

It sets and fixes the diopter values; it focuses both halves of the binocular: the ingenious multi-function knob on Leica binoculars.

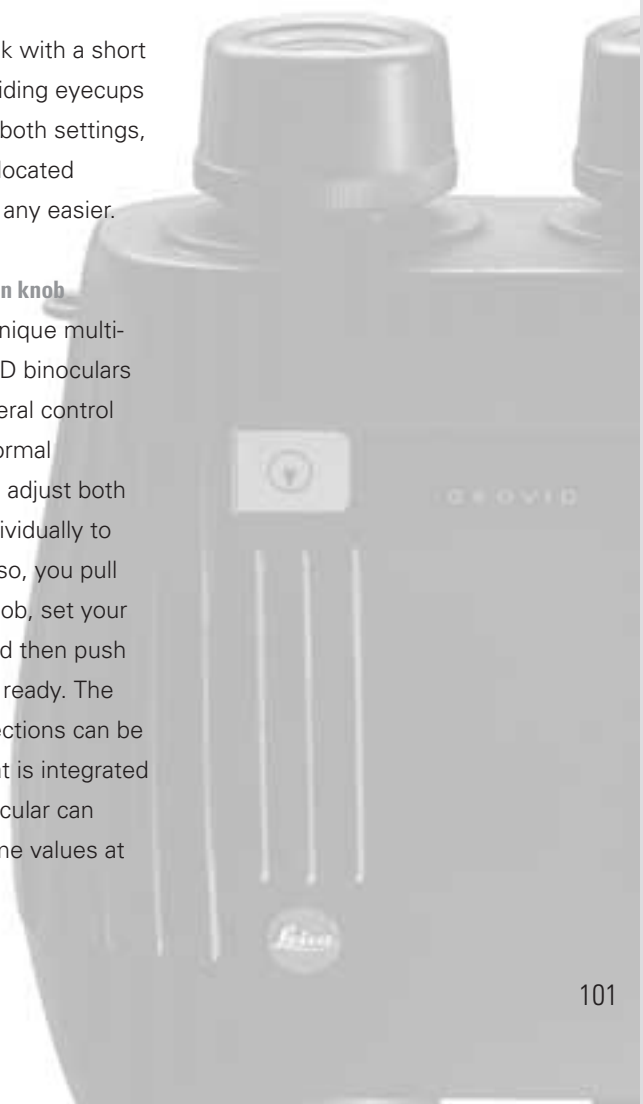
surfaces, neither dirt nor humidity can be drawn inside. The view through the binocular remains bright and clear in any weather.

Sliding eyecups and oculars for eyeglass wearers

There are many binoculars that place eyeglass wearers at a disadvantage – they will have a markedly smaller field of view. By comparison, Leica binoculars and spotting scopes offer everyone across the board, the same, unrestricted field of view. With or without eyeglasses. Because a concerted effort was made in the optical computations to position the exit pupil far back. That enables the eyes always to be at the proper distance from the ocular: When you look through the binocular without eyeglasses, you simply pull out the sliding eyecup. If you wear glasses, you simply push them back with a short push of your finger. The sliding eyecups firmly lock into position in both settings, so that they cannot be dislocated accidentally. It couldn't be any easier.

A sophisticated multi-function knob

Developed by Leica, the unique multi-function knob on TRINOVID binoculars ingeniously combines several control functions. In addition to normal focusing, you can use it to adjust both halves of the binocular individually to the respective eye. To do so, you pull out the front half of the knob, set your personal diopter values and then push the knob back in – and it's ready. The values are fixed. The corrections can be read on a diopter scale that is integrated into the knob and the binocular can quickly be reset to the same values at any time later on.



Brilliance in a pocket format: Leica compact binoculars

The advantages of LEICA TRINOVID binoculars are not a matter of size. The fascination of superb optical performance and precise mechanical details is also present in Leica compact binoculars. Their great plus: they fit in your pocket, and you can comfortably take them along anywhere.

Luis Castañeda

To see and to be seen: with a Leica compact binocular you are always seated in the first row.

Outstanding test results have confirmed the superb quality of LEICA TRINOVID compact binoculars again and again. They offer the same quality characteristics as their bigger "brothers", but with distinctly smaller sizes and weights. High-grade optical glasses and complex optical computations ensure razor-sharp and snappy bright images. Sliding eyecups, diopter correction, the silky-smooth focusing knob, they all ensure comfortable and very easy handling.

True internal focusing and a robust metal housing make Leica compact binoculars weatherproof and water resistant. The precise interplay between all optical and precision mechanical components is preserved, even under hard usage.

LEICA TRINOVID 8 x 20 BC/BCA

This compact lightweight features brilliant image rendition, and with its approximately 230 grams, or just over 8 ounces, it is always conveniently handy, when an interesting subject turr up. With the small size of about 9 by 6 cm or 3 9/16 by 2 3/8 inches, it fits neatly in most any pocket. Thanks to its 115 m wide field of view at 1000 m (115 yds. at 1000 yds.) and its extreme close near-focusing distance of only 3 meters (or 9 ft. 3 in.), it has very versatile applications. A popular binocular, and ladies often prefer the version with elegant titanium finish.

LEICA TRINOVID 10 x 25 BC/BCA

As small as it is powerful, this compact binocular guarantees outstanding detail recognition, even of very distant subjects. It distinguishes itself by its superb sharpness and contrast rendition, and with only 250 grams (or less than 9 ounces), it is a pleasant lightweight. All in all, a very handy, excellent performance binocular for daylight observation. It is always the right binocular when the outfit has to be kept to a minimum without sacrificing top performance.

Versatility for demanding clients: the 32- and 42-series LEICA TRINOVID binoculars

LEICA TRINOVID high-performance binoculars of these series are equally suitable for everyday applications and for extremely harsh use as well. That's because they embody an outstanding synthesis of exceptional imaging quality and robust durability.

Luis Castañeda

"I use Leica binoculars for my activity as an ornithologist, because their high resolving power makes detailed observation possible, even under critical light conditions. Their robust, yet compact design has proven itself in the deserts of the Middle East, just as it has in the Antarctic, and the brilliance of its optics allow fatigue-free viewing."

Hadoram Shirihai, Israel

LEICA TRINOVID 10 x 32 BA

The TRINOVID 10 x 32 features compact design, high magnification and outstanding imaging quality. It stands out for its remarkable close-up range, down to 2.60 m or 8' 6". Thus you can not only enjoy brilliant distant observation, but you can also use this wide-angle binocular to study butterflies or dragonflies at close range.

LEICA TRINOVID 8 x 32 BA

If you are looking for a versatile binocular with compact dimensions and high optical performance, then the TRINOVID 8 x 32 BA offers you an excellent combination. With its large field of view of 135 m at 1000 m (135 yds. at 1000 yds.), and a close-up distance of

only 3.20 m or 6' 6"., it is a great all-round binocular for near and far. The ideal companion for hikers, mountain climbers and nature lovers.

LEICA TRINOVID 7 x 42 BA

This 7x binocular with high light-gathering power is primarily designed for extreme viewing conditions. Its special characteristics: a 6 mm exit pupil and a very large and super-bright field of view of 140 m at 1000 m (140 yds. at 1000 yds.). They let you keep fast-moving subjects firmly in sight, even under difficult light conditions. Another plus: with the TRINOVID 7 x 42 you can keep everything well in sight, even when your hands are not as steady as usual – for instance after a strenuous hike. Because of its high light-gathering power, this binocular offers a bright image well into dusk.

Watersport Set:
The LEICA TRINOVID 7 x 42 BA is also available in a set for watersport fans who are conscious of style – with elegant navy blue armoring. With a floating carrying strap, eyepiece cover, and a navy blue ever-ready case made of waterproof Cordura.

LEICA TRINOVID 8 x 42 BA

With its well-balanced performance characteristics, this binocular is a genuine multi-talent. It is ideally suited for those who are looking for an all-round binocular for all sorts of applications. Its field of view of 130 m at 1000 m (130 yds. at 1000 yds.) always provides you with a good overview, and its medium magnification reduces the danger of a shaky image. With a 5.35 mm exit pupil, the TRINOVID 8 x 42 still has ample reserves for calm and precise observation, even under poor light conditions.

LEICA TRINOVID 10 x 42 BA

The prominent feature of this binocular is its high magnification factor. With a 10-power magnification, you are optimally equipped for observing small and distant subjects. In sports, at horse races, while hunting, or for the observation of animals. Ornithologists especially, really appreciate the TRINOVID 10 x 42 because it enables them to clearly identify the characteristics of different species from a distance. Outstanding sharpness and contrast rendition, and its high resolving power, enable the observer to differentiate subtle details, even in the waning light of dusk.

Hunter's Set:
With this set you are certain to make a good impression on wildlife: Hunter's Set with green-armored LEICA TRINOVID 10 x 42 BA, green Neoprene carrying strap, eyepiece cover and green ever-ready case of watertight Cordura.

Binocular highlights: the 50-series of LEICA TRINOVID

The outstanding optics with a front lens diameter of 50 mm make the TRINOVID 8 x 50 BA, 10 x 50 BA and 12 x 50 BA precision binoculars into high light-gathering power instruments that can demonstrate their superior performance not only in poor light conditions. They feature an unequalied resolving power.

Franz Bagyi

LEICA TRINOVID 12 x 50 BA

Acceding to the wishes of numerous users who wanted a binocular with extra high magnification, Leica has developed the new TRINOVID 12 x 50 BA binocular. The very high demands on imaging performance at 12-power magnification were satisfied by means of a new optical computation, combined with the very latest fabrication technologies. In spite of the increased magnification factor, it can be held steadily and it offers a subjective angle of view of 68° and a field of view of 100 m at 1000 m (1 yds. at 1000 yds.). Its extremely high twilight factor enables the viewer to distinguish the finest details, even under unfavorable light conditions. In short: the binoculars with the highest performance optics that Leica has ever developed.

LEICA TRINOVID 8 x 50 BA

A universal binocular with very high light-gathering power and surprisingly compact and slender design. Its exceptionally large 6.25 mm exit pupil ensures an optimal light utilization; the TRINOVID 8 x 50 BA produces an extraordinarily brilliant image well into sundown. Your eyes will appreciate the optical advantages of this professional instrument in every respect: fatigue-free observing even under extreme situations are another major plus of this binocular.

In addition to the standard version in black, the LEICA TRINOVID 8 x 50 BA is also available in a Hunter's Set, with green armoring and with a hard black leather case.

LEICA TRINOVID 10 x 50 BA

Especially under poor light conditions, this top-class binocular shows distinctly why it is among the very best in the world. The finest details can be discerned perfectly, even at dusk. The TRINOVID 10 x 50 BA has high light-gathering power and it guarantees excellent contrast rendition and outstanding resolving power all the way into the close-up range of 4.80 m or 15' 9" in. It's the first choice for the professional in every respect, and because of its 10-power magnification, it is particularly recommended for nature friends and ornithologists.

The most modern fabrication methods and the highest precision ensure a brilliant image: LEICA TRINOVID – the guarantee for state-of-the-art optical and mechanical performance.

The most important plus points of Leica binoculars:

- Brilliant viewing because of superior optical performance.
- Permanently clear viewing because of flawless sealing of the all-metal housing with added nitrogen filling.
- Comfortably easy focusing and diopter correction because of the multi-function central focusing drive.
- Very large field of view – with or without eyeglasses – because of optimally designed eyepieces and instantly adjustable sliding eye cups.
- Extraordinarily close near-focusing distances: down to 2.60 m or 8' 6". with the LEICA TRINOVID 10 x 32 BA.
- Enclosed construction with true internal focusing offers the very best protection of internal precision components.
- Ruggedness and longevity reassured by the use of all-metal housings with shock- and sound-absorbing polyurethane armoring.
- Eyestrain is prevented by the enduring precise calibration of the optical systems in each half of the binocular.
- 30 years guarantee based on more than 140 years of experience in optical and mechanical precision.

Orientation as you like it: LEICA GEOVID

The LEICA GEOVID 7 x 42 BDA is far more than just a superb binocular. It combines high-grade Leica optics with a laser rangefinder and an electronic compass, all in a single instrument. For demanding observation and accurate orientation – in the field, at sea or in the air.

Roger Garwood

State-of-the-art optics, a laser rangefinder and a digital compass, all contained in a seawater-protected binocular housing: the LEICA GEOVID 7 x 42 BDA offers three functions in a single instrument.

Leica introduces a new generation of binoculars with the GEOVID. It incorporates, of course, the unrestricted peak-performance of Leica optics. In terms of sharpness, contrast, range and resolving power, the LEICA GEOVID distinguishes itself with outstanding characteristics. And in conjunction with its precise electronic measuring technology it becomes a trendsetting high-tech instrument for demanding professional applications.

With an infrared rangefinder…

The accurate infrared rangefinder of the GEOVID, with a range of 1000 m or 3280 ft. (nearly 1100 yds.), works fast, reliably and conveniently. You target your subject with the small red square in the center of the field of view, briefly touch the button, and in a fraction of a

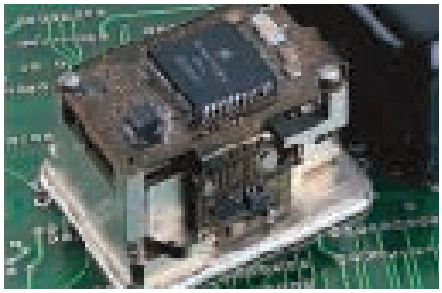
second, the distance to the subject is displayed in the field of view. Accurate to within one meter, or stightly more than a yard.

… and an electronic compass

And the LEICA GEOVID 7 x 42 BDA also makes it possible to determine an accurate orientation in virtually any situation. With the integrated digital magnetic compass, a precise orientation reading can be obtained at any time, simply by pressing a button. A magnetic deviation, programmed earlier, is taken into account automatically. And you don't even have to hold the GEOVID level – it displays the azimuth reading in the field of view at inclinations of up to 35°.

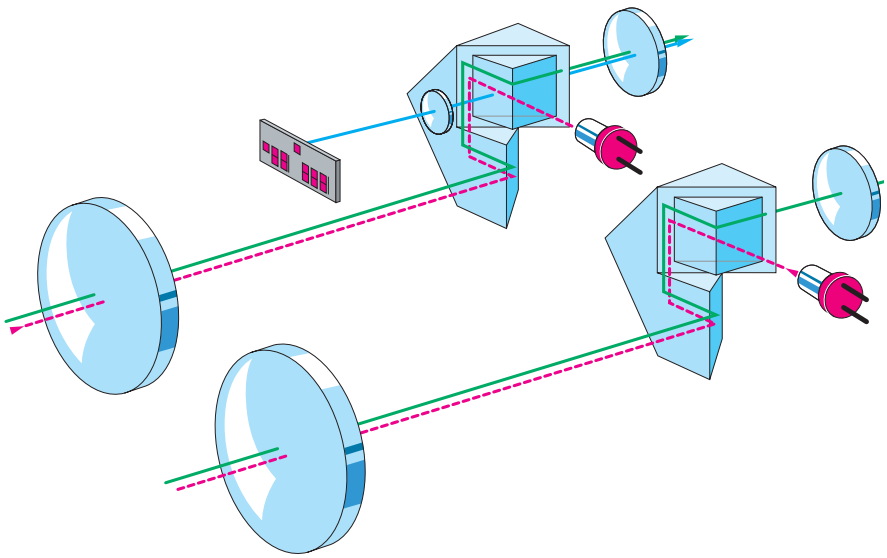
Distance measuring made easier

If you always know in which direction to proceed when you are underway, you can confidently dispense with the compass. In that case, the LEICA GEOVID 7 x 42 BD version is the ideal choice for you, because it is equipped with the rangefinder only. By dispensing with the compass, it was possible to reduce the weight of the GEOVID by 140 grams, or nearly five ounces. A welcome relief for those who want to carry less weight.



High-tech – made by Leica. The digital compass delivers the greatest performance within the smallest space.

For those who don't need a compass when they are traveling: the LEICA GEOVID 7 x 42 BD – with just the rangefinder.



This is how the rangefinder in the GEOVID works: press the rangefinder button and position your subject with the small red targeting square in your field of view. The instrument sends out an infrared light pulse that is reflected by the targeted subject. The microprocessor computes the distance from the time it took for the pulse to be reflected back to the instrument. The exact distance is displayed in the field of view.

Close enough to touch – with the LEICA TELEVID

Experience the fascination of nature at close range with LEICA TELEVID 77 and LEICA APO-TELEVID 77 spotting scopes: one look through the true-color, high-magnification and high-performance spotting scopes is enough for an expert observer to discern very distinctly what remains concealed for others.

Fabrice Edel

"Leica optics are simply the best"

Bill Oddie, England

If you are interested in observing the world of plants and animals more intensely, for longer periods of time and with greater magnification than that provided by binoculars, you should become more familiar with the two LEICA TELEVID high-performance spotting scopes. Available with straight or angled eyepieces. They guarantee brilliant viewing from daybreak well into twilight, and they bring out even the smallest details accurately and distinctly.

TELEVID 77 and APO-TELEVID 77

The number "77" in the name of our spotting scopes refers to the diameter of the front objective lens in millimeters. Such an ample dimension (nearly 3 inches), in conjunction with the complex optical system and the multiple anti-

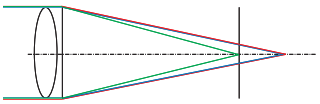
reflection coatings in the TELEVID 77 ensure a true-color, contrasty and super-bright image, which is certain to impress you in every respect. Your enthusiasm could only be greater with the APO-TELEVID 77. Its high-grade fluorite-containing optical glasses have very high light transmission qualities, and they do not produce any color fringes. With this highly corrected spotting scope, you can discern even the tiniest details of the subject with absolute color fidelity and outstanding resolution, from the center to the very edges of the field of view. And this down to a range of 3.90 m, or less than 13 ft.

Magnification to suit your needs

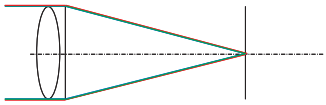
Depending on your range of applications, you have the choice of four precision eyepieces with different magnifications. A convenient bayonet mount allows them to be attached with a flick of the wrist. And with the set back exit pupils, that are typical for Leica, you can comfortably observe the full, unrestricted field of view, even if you wear eye-glasses. The largest field of view is covered by the B 20x WW wide-angle eyepiece, which stands out because of the brilliant and bright image that it produces (20-power magnification). But the top-of-the-line B 32x WW eyepiece also offers a large field of view, in spite of its 32-power magnification. For the precise observation of small details from large distances, the B 40x eyepiece is the best choice. The greatest flexibility, however, is provided by the B 20–60x zoom eyepiece. It can be used to locate a subject in its surroundings with low magnification, and then to zoom in with higher magnification in order to examine its finest details close up. – And there is no need to re-focus after changing eyepieces, because sharpness is retained from the previous setting.

A rapid-change bayonet allows an eyepiece to be attached with a flick of the wrist.

A large focusing wheel for quick coarse focusing, a smaller one for fine focusing – a practical and handy dual focus control.



Color correction with achromatic lenses.



Color correction with apochromatic lenses (as in the APO-TELEVID 77, for instance).