

Binocular & Spotting Scope
BUYING GUIDE



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BINOCULAR & SPOTTING SCOPE BUYING GUIDE

INTRODUCTION

Binoculars are available in many sizes and designs. A quality binocular – carefully chosen and cared for – will give you bright, sharp views of the world for many years. Our binocular experts at National Camera Exchange hope the following information will be helpful in choosing the best binocular for you. If you have questions, please do not hesitate to call.

BINOCULAR BASICS

Binoculars are typically described by two numbers, such as 7x35, (seven by thirty-five). The first number given is the power or magnification. A 7x (seven power) binocular will make an object look seven times closer or seven times larger than you would see with the unaided eye.

The second number, 35, refers to the diameter or width (in millimeters) of the front, or objective lens. The size of the objective lens determines how bright an object will appear to your eyes. A third number commonly printed on binoculars is the angle or field of view. This number tells you how wide an area you will see.

Power or Magnification



The magnification of most hand held binoculars range from 7x to 12x. Seven and eight power models are considered to be the most versatile, multi-use binoculars. Although it seems sensible that a high power model would help you see things in more detail than a low power model, this is rarely the case. The largest drawback of higher power is that along with magnifying the object, it also magnifies the movement of your hands and body, which causes the image you see to shake or appear jumpy. Keep in mind that the shake will be noticeably worse during and for a short time after any physical exertion. A second drawback is that higher power models generally have a smaller field of view, causing difficulty in finding or following objects.

We do not mean that 9x to 12x binoculars should be avoided. Many experienced birders prefer 10x models, especially for birds that are difficult to approach such as raptors and shorebirds. We

suggest you try looking through a high power binocular to determine whether or not you are able to hold them steady. Hand held use of magnifications above ten power is extremely difficult and we suggest using a tripod or window mount for best results. When a magnification of 15x or higher is required to see detail at a distance, a tripod-mounted spotting scope or image stabilized binocular should be considered.

Objective Lens

The size of the objective lens directly affects the brightness of the image and the physical size and weight of the binoculars. It does not affect the field of view or area that you will see.

A larger objective lens will gather more light and usually deliver a sharper, brighter image. We stress the word usually because once the light is collected, there are many factors that affect how well it is delivered to your eyes. These factors will be covered later in optical quality.

The downside of a larger objective lens is that as the size of the lens increases, so does both the weight and size of the binoculars. Those that are too large or heavy to carry comfortably tend to get left behind.

Angle or Field of View

Manufacturers use two interchangeable terms to describe the amount of area you will see while looking through binoculars. Linear field of view is the most commonly used method and describes how wide an area (in feet) you will see while viewing an object one thousand yards away, usually denoted as xxx feet at 1000 yards. The second method, used by most European manufacturers, is angular field of view which describes the same area measured in degrees of arc. Each degree is 52.5 feet across at 1000 yards away, so to convert the angular field of view into linear field of view, multiply the degree of arc by 52.5 feet. As a general rule, the higher the magnification, the smaller the field of view. Therefore a 10x model will usually have a smaller field of view than a 7x model. In addition to magnification, the design and quality of both the prisms and eyepieces also affect field of view. Although a wide field of view is desirable, beware of inexpensive models boasting a field of view of 10 degrees (525 feet at 1000 yards) or more because sharpness is usually sacrificed for an extremely wide field.

BEYOND THE BASICS

Exit Pupil

You can see the exit pupil of any binocular by holding it at arms length and pointing it at a light. The exit pupil is the circle of light leaving the eyepiece. Under dim and dark conditions a larger exit pupil will provide a brighter image. However, on bright or sunny days the pupils in your eyes close down and will not make use of all the light. To determine exit pupil size (diameter in millimeters), divide the diameter of the objective lens by the magnification. A 7x35 model will deliver a 5mm exit pupil ($35 \div 7 = 5$). The exit pupil of most binoculars vary between 2.5mm and 7mm.

Relative Brightness Index

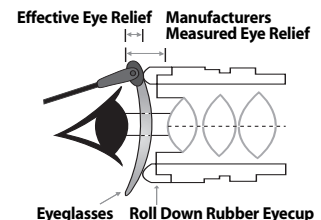
The relative brightness index is used to compare how well binoculars with different size exit pupils will perform under dark conditions. This index reminds us that as the size of the exit pupil increases, its area and ability to transmit light grow geometrically. To find the relative brightness, square the exit pupil. A binocular with an exit pupil of 5mm has a relative brightness of 25 ($5 \times 5 = 25$). Because relative brightness does not consider factors such as optical quality or coatings, it should be used only as a rough guide.

Near Focus

The term near focus indicates the shortest distance (in feet) you can be from an object and still maintain a sharp focus. For uses such as bird watching or nature studies, binoculars with a near focus of 15 feet or less are recommended. Models with a near focus of 10 feet or less are considered exceptional.

Eye Relief

Eye relief refers to the distance (in millimeters) your eyes can be from the eyepiece and still see the entire field of view. Although short eye relief poses few problems for those who do not wear glasses, long eye relief is important to people who need or want to wear eyeglasses or sunglasses while using binoculars. We suggest an eye relief of 15mm or longer if you wear glasses and want to see the full field of view.

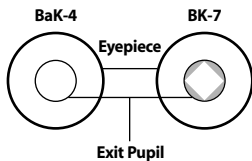




BINOCULAR & SPOTTING SCOPE BUYING GUIDE

Optical Quality

Four major factors determine the optical quality of binoculars: optical alignment, prism quality, lens quality and coatings. A durable and rigid housing is necessary to ensure the precise optical alignment of all lenses, prisms and eyepieces. If alignment is off by a small amount, the muscles of your eyes must work to compensate, which can cause eyestrain and headaches. Double or crossed vision will occur if optical alignment is off by a large amount. The prism quality depends on both the quality of glass used and prism design. Most high quality binoculars use BaK-4 prisms which provide crisp colors and clear, round exit pupils. Lower quality prisms such as BK-7 limit sharpness and detail. They also dull colors and provide an exit pupil with squared off edges. Color fidelity, brightness, contrast and sharpness are all affected by lens quality.



High quality glass such as ED (extra-low dispersion) or fluorite are used to provide the sharpest, most brilliant images possible. Anti-reflective coatings significantly improve brightness and contrast while reducing both glare and light loss. Fully multicoated optics will provide higher contrast and detail than multicoated, coated, or non-coated lenses.

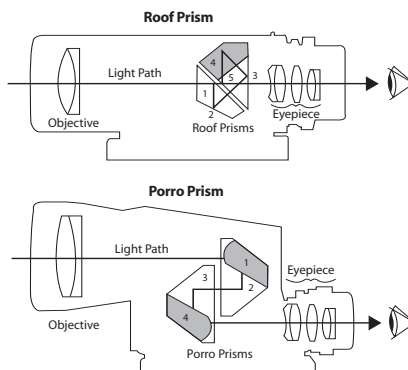
Focus Types

Three basic focus systems are used: center, individual and permanent focus. The center focus style is most common. Both sides focus simultaneously by turning a central dial. This allows for quick and simple focusing while viewing moving objects. Binoculars that are focused by turning each eyepiece individually are best suited for viewing slow-moving or stationary objects that do not require constant refocusing. Many water navigation and astronomy models employ individual focus systems. Permanent focus, or non-focusing systems produce inferior detail and are used mainly in lower quality

models. Permanent focus models have two major drawbacks: close focus is normally 30 to 40 feet, and they lack a diopter which allows you to adjust for differences in eye strength.

Prism Design

Modern binoculars use one of two prism designs: porro or roof. The diagram above shows the path that light follows through porro and roof prism models. Utilizing fewer prisms and a simpler light path, porro prism binoculars are less costly to manufacture and usually offer optics equal to more expensive roof prism models. Many premium quality binoculars use the roof prism design because they are more compact and will tolerate rougher use.



Water & Binoculars

Binocular manufacturers use many terms to describe how wet a particular model can get without internal fogging or damage. Only models labeled waterproof are guaranteed against water leakage and are often filled with nitrogen to prevent fogging. All other models vary greatly in their ability to resist moisture. Descriptions such as weather-resistant, showerproof, splashproof, and weatherproof usually indicate a model is highly resistant to moisture, but generally offer no guarantee against water damage or fogging under extreme conditions. Rubber coverings do not affect a binoculars resistance to water.

Warranties & Accessories

All equipment sold by National Camera Exchange comes complete with USA warranties and factory supplied accessories.

Every binocular will include a carrying case and neck strap unless otherwise specified. If you have any questions regarding warranties or accessories, please call and ask for the binocular department.

If you would like more information or need assistance choosing binoculars, contact one of our experts at our toll-free number – just ask for the binocular department.

FOUR MAJOR BINOCULAR STYLES



FULL-SIZE PORRO PRISM



COMPACT PORRO PRISM



FULL-SIZE ROOF PRISM



POCKET ROOF PRISM



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BINOCULAR TIP



Cleaning

It's a fact of life, no matter how careful you are with your optics, the lenses will eventually need to be cleaned. We suggest the following method:

1. Remove major grit and debris by lightly brushing with a camel hair brush or by blowing off material using compressed air.
2. Fold a cleaning cloth or lens tissue in half, then roll tightly from one end to form a cylinder. (Q-Tips will also work, but often leave strands of cotton on the lens.)
3. Wet the end of the cloth or Q-Tip with lens cleaning fluid.
4. Start in the center of the lens and clean in an overlapping spiral motion towards the outside of the lens. Repeat process with new Q-Tip, tissue or refolded cleaning cloth until lens is clean.



BINOCULARS

BUSHNELL



Custom

The Customs have long eye relief for eyeglass wearers, are fully multicoated and focus at 9 feet. The Customs have become a birdwatching standard.

400011609 7x26 Custom



Elite

The new Elite binoculars are Bushnell's top-of-the-line offering. The light-weight magnesium frame is rugged and 100% waterproof/fog-proof. Bushnell's new XTR coating technology delivers bright, high contrast images tuned for accurate color fidelity and ultra-fine clarity. Long eye relief with twist up/down eyecups allow for comfort with or without eyeglasses. Both the 8x43 and 10x43 Elites include quick-connect neck strap, rainguard and custom-molded case.

400024208 8x43 Elite
400024201 10x43 Elite



Legend

Those of you shopping for a rugged, waterproof binocular will find an exceptional buy in the Bushnell Legend. Complementing the compact roof prism design, the Legend models combine long eye relief, patented twist-down eyecups for ease of use with eyeglasses and a ribbed non-slip rubber armoring for a superior grip during inclement weather.

400003208 8x32 Legend
400022767 8x42 Legend
400022774 10x42 Legend



Birding Series

The Natureview binoculars are designed for the budget-minded birdwatcher and naturalist. The 8x42 and 10x42 feature long eye relief, 13 foot close focus and an ergonomically designed rubber covering. The upgraded optics of the newer "Plus" models use BaK-4 prisms and fully multicoated lenses. Recently added to the Bushnell Birding series is the 8x40 Birder. It is a lightweight, BK-7 porro prism with good close focus.

400012785 8x42 Natureview Plus
400013618 10x42 Natureview Plus
400023432 8x40 Birder

CANON



Image Stabilized

The Canon Image Stabilized binoculars are an exceptional choice for those who require high power yet want to avoid carrying a cumbersome tripod. The six image stabilized models offered by Canon vary from a portable 8x25 version to a high powered 18x50. Utilizing Canon's patented Vari-Angle prism, the IS models allow the user to maintain a steady image – even in moving vehicles. The roof prism bodies are water-resistant to enable use in light rain or spray and use two AA batteries. We suggest the new lithium style AA if you will be using them under cold conditions.

400007562 8x25 Image Stabilized
400020485 10x30 Image Stabilized
400060248 10x42 WP Image Stabilized
400018007 12x36 Image Stabilized
400046710 15x50 Image Stabilized
400047000 18x50 Image Stabilized

LEICA



Ultravid Pocket

The Leica Pocket models are high quality, extremely small waterproof roof prism binoculars. Small enough to fit into your shirt pocket, these soft-touch armored binoculars will go everywhere you go. They come with a belt loop carry case and Leica's Lifetime Passport Warranty.

400028325 8x20 BR Pocket
400028332 10x25 BR Pocket



BINOCULARS

LEICA

NIKON



Ultravid

The ultimate combination of optical excellence and mechanical precision: waterproof, dustproof with internal focusing in a robust magnesium frame. All Ultravids have multi-position twist, up/down eyecups, long-eye relief and rugged soft-touch armoring. The technical advances combined in the Leica Ultravids make them a worth-while investment that are built to last a lifetime.

400040018	7x42 BR Ultravid
400040016	8x32 BR Ultravid
400040017	8x42 BR Ultravid
400040069	8x50 BR Ultravid
400040015	10x32 BR Ultravid
400040019	10x42 BR Ultravid
400040070	10x50 BR Ultravid
400040071	12x50 BR Ultravid
400040400	8+12x42 Duovid
400057667	10+15x50 Duovid



Prostaff ATB

The Prostaff is designed for those who need waterproof and fogproof performance in a compact binocular. The rubber armored Prostaff integrates bright multicoated lenses, BaK-4 high index prisms and twist up and down eyecups.

400018784	8x25 Prostaff
400068410	9x25 Prostaff
400082011	10x25 Prostaff
400072759	12x25 Prostaff



Action Extreme ATB

The Action Extreme series are modeled after the best selling Action binoculars. All Extreme models are nitrogen filled and o-ring-sealed for years of waterproof and fogproof performance. Additional features such as twist up and down eyecups, long eye relief and built-in tripod adapter socket appeals to all users.

400072377	7x35 Action EX
400072388	8x40 Action EX
400072450	10x50 Action EX
400072462	12x50 Action EX
400072476	16x50 Action EX



Premier LX

The Premier LX's use Nikon's fully multicoated, low-dispersion glass and phase-coated high-index prisms to create bright images that are sharp from edge to edge. The wonderful eye relief and the twist in-and-out, infinitely adjustable eyecups are great to use, with or without eyeglasses. The diopter ring is simple to adjust and locks securely in place. The nitrogen purged body and grippy rubber armor provide for comfortable use in the most adverse weather.

4000080102	8x20 Premier LX
4000063511	8x32 Premier LX
4000001225	8x42 Premier LX
4000077246	10x25 Premier LX
4000069838	10x32 Premier LX
4000075750	10x42 Premier LX



Monarch ATB

The mid-sized 8x, 10x, 12x Monarch binoculars are tailored for rugged outdoor use. This doesn't mean that they wouldn't work well for indoor use as well, but the slim roof prism design with waterproof, fogproof and shockproof construction lends itself well to the abuses normally encountered while actively viewing mother nature's splendor. The Nikon Monarchs offer a near focus distance of 6.2 feet which allows you to view fine detail of objects that are close at hand. Fully multicoated lenses and phase-coated prisms assure a bright, detailed view, while long eye relief and turn-and-slide eyecups allow for comfortable use with or without eyeglasses.

400028556	8x42 Monarch
400028563	10x42 Monarch
400084024	12x42 Monarch



Action

The Nikon Action series are suitable for a broad range of dawn to dusk activities. Nikon utilizes high quality components such as aspheric eyepieces, BaK-4 prisms and multicoated lenses for superior resolution and brightness. Due to the combination of high quality optics and durable mechanical build, the Action series are widely considered the best value in their price range. All Action series binoculars include a carrying case, neck strap, rainguard and Nikon's Lifetime No-Fault Warranty.

400007200	7x35 Action
400007201	7x50 Action
400007203	8x40 Action
400007204	10x50 Action
400007206	12x50 Action
400007202	7-15x35 Action Zoom
400007205	10-22x50 Action Zoom XL



Travelite V

Nikon's Travelite V binoculars are a "take anywhere" ultra-light compact porro prism designed with portability and close focus in mind. Every Travelite V incorporates BaK-4 prisms, fully multicoated lenses, a click-stop diopter and lustrous finish.

400031160	8x25 Travelite V
400031167	9x25 Travelite V
400031174	10x25 Travelite V
400031181	12x25 Travelite V

NIKON

All Terrain Binoculars (ATB)

Nikon's All Terrain Binoculars (ATB) allow outdoor enthusiasts to pursue their interest rain or shine. A full range of durable, waterproof binoculars from the compact prostaff to the full-sized 16x50 Action Extreme ensure there is a Nikon ATB to fit your exact needs.

National Camera is a Nikon Premier Dealer and includes the following warranty with all Nikon sports optics:

**Nikon Premier Dealer
Lifetime No Fault
Repair/Replacement
Policy**



BINOCULARS

NIKON

PENTAX

SWAROVSKI



Sportstar

The Nikon Sportstar models are the best affordable pocket binoculars on the market. The sleek, water resistant, ergonomic design provides for a truly portable binocular. Perfect for backpacking, hiking or concerts, the Nikon Sportstars will slip into your pocket with ease.

- 400047864 8x25 Sportstar
- 400044644 10x25 Sportstar



Superior E

Nikon introduced the Superior E series to respond to the growing demand among birders for a lightweight porro prism with premium optics. Due to the light efficiency of the porro prism design, the Superior E produces images as high in contrast and detail as any 8x32, 10x42 or 12x50 roof prism on the market. All models pack BaK-4 high-index prisms, low-dispersion glass and good close focus into a durable, lightweight magnesium chassis. If you don't require a waterproof body, the Superior E's are the new standard.

- 400029298 8x32 Superior E
- 400027401 10x42 Superior E
- 400030103 12x50 Superior E



Papilio

The 8.5x21 Papilio binocular is designed for those who want extreme close focus for observation of butterflies, dragonflies and other insects. The close focus of 1.6 feet is exceptional and means you won't have to back away from the object you are viewing. The Papilio also works well as a conventional binocular for travel, sports and hiking.

- 400060988 8.5x21 Papilio



SLC

The SLC line from Swarovski provides a variety of high quality, rugged roof prism binoculars designed for any outdoor wildlife viewing. The soft ergonomic rubber shell and waterproof aluminum frame ensure that all SLC models are guaranteed shockproof under Swarovski's limited lifetime warranty. Swarotop® and Swarodur® multi-coatings, along with phase-coated high-density prisms provide detailed images even in twilight. The locking diopter, twist-down eyecups and tripod adapter socket are features included in every SLC model.

- 400025364 7x42B SLC
- 400029760 7x50B SLC
- 400024860 8x30WB SLC
- 400029340 8x50B SLC
- 400004003 8x56B SLC
- 400025175 10x42WB SLC
- 400028451 10x50WB SLC
- 400082377 15x56ER SLC

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Policy**

If your Nikon binocular, spotting scope or fieldscope requires service or repair not covered by Nikon's 25-year parts & labor warranty, Nikon will repair or replace it (even if it was your fault) for just \$10, plus return shipping and handling.

SWAROVSKI



EL

The ELs from Swarovski, offer an unmatched blend of high performance features. They are nitrogen-purged and sealed for waterproof submergibility; the shockproof, lightweight magnesium alloy body is wrapped with forest green rubber armoring for exceptional grip. The 3-element objectives, high density phase-coated roof prisms and patented multi-coatings, provide extreme sharpness of image and natural color transmission. The twist-down eyecups, 6 foot close focus and long eye relief are added for your comfort and convenience.

- 400032008 8x32 EL
- 400034008 8.5x42 EL
- 400032010 10x32 EL
- 400034010 10x42 EL



Doubler

This lightweight accessory doubles the power of any SLC 42mm, 50mm, or 56mm or EL binocular. Simply unscrew the right eyecup from the binocular and screw on the Doubler in its place.

- 401549240 2x Doubler

PENTAX



DCF SP

Pentax offers the DCF SP (superior performance) series as their flagship line of roof prism binoculars. The waterproof, lightweight magnesium frame houses fully multicoated lenses, phase-coated prisms and a helicoid 4-stop eyecup ring for comfort with or without eyeglasses. An innovative feature of the DCF SP series is the hydrophobic (water shedding) exterior lens coatings that allow for an unobstructed view on rainy days.

- 4000041821 8x32 DCF SP
- 4000094688 8x43 DCF SP
- 4000051985 10x43 DCR SP



Sports & Marine

Nikon's Sports & Marine series are designed for wet weather, boating and low light use. Both models incorporate BaK-4 porro prisms, individual eyepiece focus and a rugged rubber armoring.

- 400026890 7x50 Sports & Marine
- 400026883 7x50 Sports & Marine with Compass



BINOCULARS

SWAROVSKI



Pocket

Swarovski makes the only shockproof, waterproof center focus pocket models available. Incredibly sharp images, ultra-compact size and long eye relief are combined to produce a binocular equally at home in the rain forest or at the opera. Carrying case included.

400024867 8x20B-P
400025168 10x25B-P

SWIFT



Ultra Lite

The popular Swift Ultra Lite has been updated. The rugged one-piece rubber armored body is now waterproof and fogproof, the eyecups are the twist-up style for the convenience of eyeglass wearers. These top-notch porro-prism binoculars use high-index BaK-4 prisms and fully multicoated lenses to provide excellent detail and brightness. Case, neckstrap and rain-guard are included.

400025189 8x42 Ultra Lite
400025196 10x42 Ultra Lite

VORTEX



Stokes DLS

The Stokes DLS Birding series by Vortex are conceived, designed and endorsed by and for birders. They feature twist up and down eyecups, a precisely designed focus system and rugged, waterproof, nitrogen-purged construction. Each model includes a premium neckstrap, carry case, rain-guard and tethered objective lens caps. The VIP warranty is completely transferable and assures users that should a DLS ever need service, whatever the cause, the binoculars will be repaired or replaced free of charge.

400029834 8x42 Stokes DLS
400097102 10x42 Stokes DLS

SWIFT



Audubon

The Swift 8.5x44 Audubon has been a favorite among avid birders. This full-size BaK-4 porro prism binocular offers a bright panoramic view. Multicoated optics, encased in a durable, waterproof body make the 8.5x44 a best buy. Swift now offers an 8.5x44 with ED (extra-low dispersion) glass and a 10x50.

400030102 8.5x44 Waterproof Audubon (New Design)
400000820 8.5x44 Waterproof ED Audubon
400082800 8.5x44 WP Roof Prism

THEATER GLASSES



Encore

Refined, sophisticated, yet modern. They fit easily into a purse or jacket pocket. These traditional opera glasses have a contemporary flair – at the touch of a button and it's red light illuminates your program without disturbing your eyes or those around you. The rich ebony and gold Encore includes a soft carry bag and limited lifetime warranty.

400024616 Encore



Symphony

With an adjustable handle and central focus, you can use the Symphony theater glass for all your theater events. The compact Symphony features a lustrous refinish with gold trim and includes a soft vinyl carrying bag.

400084370 Symphony

ZEISS



Victory 7 FL*

The Victory line of roof prism binoculars from Zeiss has set a new industry standard. Utilizing Abbe-König prisms, phase-coatings and patented T* multi-coatings, all models boast a light transmission rate of 90% (compared to 83% for most high end competitors). The high transmission rate translates into a bright, high contrast image all the way to the edge of the field of view. They feature a new submersible waterproof, lightweight body design, twist up and lock eyecups, short close focus and transferable lifetime warranty.

400052322 8x32 T* FL
400002098 8x42 T* FL
400070388 8x56 Victory
400025475 10x32 T* FL
400019155 10x42 T* FL
400020653 10x56 Victory

BINOCULAR TIP



Proper Diopter Adjustment

Correctly setting the diopter on your binoculars will enable you to maximize detail and ensure comfortable viewing. It is important to keep both eyes open while adjusting the diopter, because if you close one eye, you squint slightly through the open eye and won't get an accurate setting. View the same subject with both left and right side.

1. Look through the left eyepiece with your left eye while covering the right front lens with your hand. Focus using the center focus wheel until sharp.
2. Look through the right eyepiece with your right eye while covering the left front lens. Turn the diopter ring until subject is sharp.
3. Make a mental note of the diopter position for future reference.



BINOCULAR TIP



Grey Market Products

Grey market is the term used to describe products imported into the U.S. that were intended for sale overseas.

These products usually don't include accessories that come standard with USA warranted models. (Cases, neck straps and rainguards often must be purchased separately.)

Many are not current models, often lacking the latest features such as multi-coatings, phase-coated prisms and factory adjusted close focus. Since grey market products are meant to be sold overseas, most U.S. repair centers will not service these products under warranty and will charge you for the repair.

National Camera sells only manufacturer-authorized U.S.A. warranted goods and stands behind the products we sell with a 30-day satisfaction guarantee. We don't charge a 3-20% restocking fee (read other retailers fine print) as long as the product is returned in new condition. Finding the perfect product for you is our goal.



MONOCULARS & SPOTTING SCOPES

SHELTERED WINGS

BUSHNELL

LEICA



MONOCULARS

Audubon 6x16

Endorsed by the America Audubon Society, the 6x16 monocular is available with a blue or metallic finish. Measuring under 3" in length the 6x16 monocular is portable enough to take anywhere without a second thought about weight or bulk.

400532882 6x16 Monocular Blue
400583942 6x16 Monocular Metal



8x25 WP

The perfect answer for those who need a portable, waterproof instrument. The blue rubber armoring gives this monocular a sure comfortable grip, even when wet. Comes with belt loop carry case and wrist strap.

400586288 8x25 Solo Monocular



SPOTTING SCOPES

80 ED Elite

The new 80mm ED Elite from Bushnell is one of the best values on the market. The 80mm ED Elite includes a 20-60x zoom eyepiece, cordura carrying case and your choice of a 45° or straight-through body. The black armored bodies are waterproof and feature a smooth focuser that is easy to use. The large 80mm ED objective lens provides images that are sharp and stunningly bright.

401097351 20-60x80 ED Elite
401099548 20-60x80 ED Elite 45°
Eyepieces & Accessories - See Price List

KOWA



75N-820 Millennium

The 82mm Millennium series are the latest introduction from Kowa. The eco-friendly glass used in the Millennium models is arsenic and lead free. The standard glass and Fluorite models are available in straight-through or 45° angled versions. The 82mm bodies are waterproof and reinforced with carbon fiber to make them lighter weight without sacrificing durability. With the wide array of eyepieces and other accessories Kowa offers for the TSN-820Ms, it will be easy to find the right combination for your needs.

401082100 TSN-821 M Body 45°
401028458 TSN-822 M Body
401082300 TSN-823 M Fluorite Body 45°
401082400 TSN-824 M Fluorite Body
Eyepieces & Accessories - See Price List



Televid

The mechanical and optical quality of the Leica Televid is obvious at first glance. Offered in both standard glass and APO (apochromatic-fluorite) models, the Televid delivers images of unmatched detail and contrast. The APO Televid provides more "snap" to the image, with noticeably better contrast and color accuracy under dim lighting conditions. The sleek waterproof body, sliding sunshade, dual focusing system and a close-focusing distance of less than 13 feet make the Leica Televid a top-end contender.

401040113 62mm Armored Televid
401040114 62mm APO Armored
401041181 62mm Televid
401099065 62mm Televid 45°
401037479 62mm Televid APO
401051879 62mm Televid APO 45°
401026827 77mm Televid
401027709 77mm Televid 45°
401026834 77mm Televid APO
401027702 77mm Televid APO 45°
Eyepieces & Accessories - See Price List

NIKON

Nikon Premier Dealer Lifetime No Fault Repair/Replacement Policy

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SPOTTING SCOPES & ACCESSORIES

NIKON

PROMASTER

TRIPODS



Sky & Earth Series

We consider the Nikon Sky & Earth spotting scopes to be exceptional values in the under \$500 category. The lightweight, water resistant bodies are offered in straight or angled versions, and are available with 60mm or 80mm objective lenses. Fully multicoated optics and three interchangeable eyepieces create detailed images unmatched in their price range. All models include fingertip focus control, built-in sliding sunshade, durable metal chassis and a padded zippered case.

- 402028570 60mm w/ 20x Eyepiece
- 401028577 60mm w/ 15-45x Zoom
- 401028591 60mm Body
- 401028584 60mm 45° Body
- 401073550 15-45x60 Outfit & Tripod
- 401071855 80mm w/ 20-60x Zoom
- 401045281 80mm 45° & 20-60x Zoom
- 401007100 20-60x80 Outfit & Tripod

Eyepieces & Accessories - See Price List

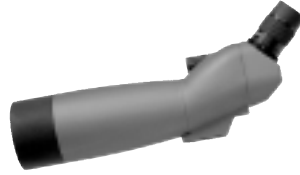


Fieldscope

Nikon offers a line of spotting scopes primarily designed for serious bird-watching, wildlife observers, target shooters and surveillance professionals. The extremely durable Fieldscopes are Nikon's best. These waterproof scopes are available with Nikon's standard high grade optical glass or their finest ED (extra-low dispersion) glass which provides superior color and contrast. They available in "straight-through" and 45° angled models. All Fieldscopes include a water-resistant carrying case.

- 401030586 60mm Body
- 401030593 60mm Angled Body
- 401030600 60mm ED Body
- 401030607 60mm ED Angled Body
- 401031090 60mm Outfit
- 401025777 82mm ED Body
- 401082523 82mm ED Angled Body

Eyepieces & Accessories - See Price List



Ultralite 18-36x60

We've finally found a quality 60mm spotting scope for under \$200. The Promaster Ultralite is a lightweight, waterproof scope that comes complete with a 18-36x zoom eyepiece and zip up carrying case.

401068410 Promaster Ultralite
Eyepieces & Accessories - See Price List

SWAROVSKI



AT5/ST5-65

According to their literature, Swarovski's new 65mm spotting scopes are a "compact solution with no compromises". We wholeheartedly agree. Designed for the enthusiast looking for a smaller, lighter scope that provides awe inspiring images, the AT5 and ST5 65's successfully combine first-class optics and innovative mechanical features. The submersible-waterproof, rubber armored body incorporates a sliding sun shield that locks when extended, a removable sighting aid for angled models, an eyepiece safety lock and a tripod foot that inserts directly into Swarovski and Bogen 3130 quick-release sockets without having to use the quick-release plate. The AT5 (45° angle) and ST5 (straight-through) are available in both standard glass and HD (High Definition) versions.

- 401049308 STS 65 Body
- 401049314 STS 65 HD Body
- 401049304 AT5 65 Body 45°
- 401049318 AT5 65 HD Body 45°

Eyepieces & Accessories - See Price List



STS-80/AT5-80

The Swarovski spotting scopes rank among the best in terms of brightness and resolution. The AT5-80 and STS-80 have one major advantage over most other scopes in their class – a shock-proof, nitrogen purged, waterproof body. The focus mechanism is quick and smooth and the long eye relief eyepieces provide a near perfect image even for eyeglass wearers. The high definition models incorporate fluorite in the objective lenses to deliver optimal color, contrast and sharpness. Available in "straight-through" (STS-80) or 45° angled (AT5-80) versions.

- 401025406 STS-80 Body
- 401025427 AT5-80 Body 45°
- 401025434 STS-80 HD Body
- 401025441 AT5-80 HD Body 45°

Eyepieces & Accessories - See Price List

ZEISS



Diascope

The Zeiss Diascope 65 T*FL and 85 T*FL models use apochromatic glass coating Fluorine ions to provide images with superb detail and natural color rendition. Zeiss utilizes phase-coated roof prisms to offer additional durability to the waterproof, nitrogen-purged Diascope bodies. The dual-speed fast/fine focuser, large tripod mounting plate and locking bayonet-mount eyepieces are well thought out features. Both the portable 65mm and brighter 85mm Diascopes are available in straight-through or 45° angled versions.

- 401028002 65mm Body
- 401028012 65mm Angled Body
- 401028003 85mm Body
- 401028013 85mm Angled Body

Eyepieces & Accessories - See Price List

- 181510300 Bogen 3169N Combo
Maximum height: 61.5"
Carrying weight: 6lb
- 181510307 Bogen 3175N Combo
Black version of 3169N
- 181507108 Bogen 3178N Combo
Maximum height: 74.75"
Carrying weight: 7.25lb
- 181510342 Bogen 3179N Combo
Maximum height: 75.5"
Carrying weight: 7lb
- 181510286 Bogen 3180N Combo
Black version of 3179N
- 180020975 Bogen 3405 Combo
Maximum height: 63"
Carrying weight: 4.25lb
- 180092963 Bogen 3178 Wilderness
Maximum height: 75.75"
Carrying weight: 8.25lb

ACCESSORIES

- 180023187 Bogen Car Window Mount with Quick Release Plate
- 182023544 Bogen 35" Tripod Bag
- 182012442 Bogen Shoulder Strap
- 401534737 Bushnell Binocular Tripod Adapter
- 401500304 Hakuba Car Window Mount
- 131090065 Microstar Synthetic Cleaning Cloth
- 401525574 Pentax Heavy-Duty Binocular Tripod Adapter
- 401589711 Swarovski SLC Tripod Adapter
- 401595350 Swarovski Bino-Suspenders
- 401549172 Swarovski Flotation Strap (Orange)
- 401512726 Zeiss Wide Neck Strap
- 401528248 Zeiss Black Rubber Rainguard

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BINOCULAR SPECIFICATIONS

	Weight Ounces	Length Inches	Eye Relief mm	Field of View at 1000 yds	Field of View in Degrees	Exit Pupil mm	Near Focus Feet	Relative Brightness
<i>Bushnell</i>								
8x43 Elite	23	5.4	20	372	7.1	5.38	8	29
10x43 Elite	23	5.4	17	314	5.6	4.30	8	18
7x26 Custom	13	3.7	17	367	7.0	3.71	9	14
8x32 Legend	24	4.7	16	396	7.6	4.00	4	16
8x42 Legend	30	6.2	18	330	6.3	5.25	6	28
10x42 Legend	30	5.9	15	314	6.0	4.20	6	18
8x42 Natureview Plus	26	5.8	19	340	6.5	5.25	13	28
10x42 Natureview Plus	25	6.0	15	320	6.1	4.20	12	18
8x40 Birder	19	5.6	10	340	6.5	5.00	13	25
<i>Canon</i>								
8x25 Image Stabilized	17	5.5	14	345	6.6	3.13	11	10
10x30 Image Stabilized	22	5.9	15	314	6.0	3.00	14	9
10x42 Image Stabilized	37	6.9	16	340	6.5	4.20	8	18
12x36 Image Stabilized	33	6.6	15	294	5.6	3.00	11	9
15x50 Image Stabilized	43	7.6	15	236	4.5	3.30	20	11
18x50 Image Stabilized	43	7.6	15	194	3.7	2.80	20	8
<i>Leica</i>								
7x42 BR Ultravid	27	5.6	17	420	8.0	6.00	11	36
8x32 BR Ultravid	20	4.6	13	405	7.7	4.00	7	16
8x42 BR Ultravid	28	5.6	16	390	7.4	5.25	10	28
8x50 BR Ultravid	36	7.2	18	345	6.6	6.25	12	39
10x32 BR Ultravid	21	4.6	14	360	6.9	3.20	7	10
10x42 BR Ultravid	27	5.7	16	330	6.3	4.2	10	18
10x50 BR Ultravid	36	7.0	15	345	6.6	5.00	11	25
12x50 BR Ultravid	37	7.2	13	300	5.7	4.17	11	17
8+12x42 Duovid	36	6.3	14	360/270	6.9/5.2	5.25/3.50	12	28/12
10+15x50 Duovid	44	7.8	14	295/230	5.6/4.4	5.00/3.33	13	25/11
8x20 BCR	9	3.7	15	330	6.3	2.50	7	6
10x25 BCR	10	4.5	15	270	5.1	2.50	10	6
<i>Nikon</i>								
7x35 Action	24	4.8	12	487	9.3	5.00	16	25
7x50 Action	34	8.1	20	335	6.4	7.14	23	51
8x40 Action	26	5.6	12	430	8.2	5.00	16	25
10x50 Action	34	7.3	12	340	6.5	5.00	23	25
12x50 Action	33	7.1	10	288	5.5	4.17	23	17
16x50 Action	35	7.2	12	216	4.1	3.12	30	10
10-22x50 Action Zoom XL	34	7.6	9	198	3.8	5.00	49	25
7-15x35 Action Zoom	27	5.5	9*	288*	5.5*	5.00*	23*	25*
7x35 Action EX	28	4.7	17	489	9.3	5.00	16	25
8x40 Action EX	30	5.4	17	429	8.2	5.00	17	25
10x50 Action EX	36	7.0	17	342	6.5	5.00	23	25
12x50 Action EX	37	7.0	18	288	5.5	4.17	23	14
16x50 Action EX	37	7.0	18	183	3.5	3.13	23	10
8-24x25 Eagleview	12	4.7	(8x)13	(8x)240	4.6	(8x)3.13	13	10
8x42 Monarch	21	5.7	20	330	6.3	5.25	6	28
10x42 Monarch	21	5.6	15	314	6.0	4.20	6	18
12x42 Monarch	22	5.7	15	262	5.0	3.50	6	12
8x20 Premier LX	10	3.7	15	356	6.8	2.50	8	6
10x25 Premier LX	11	4.4	15	282	5.4	2.50	10	6
8x32 Premier LX	25	5.0	17	408	7.8	4.00	8	16
8x42 Premier LX	28	6.2	20	366	7.0	5.25	9	28
10x32 Premier LX	25	5.0	16	340	6.5	3.20	8	10
10x42 Premier LX	28	6.2	19	314	6.0	4.20	9	18
8x25 Prostaff	13	3.9	16	330	6.3	3.13	9	10
9x25 Prostaff	13	4.0	16	293	5.6	2.78	9	8
10x25 Prostaff	13	4.1	16	262	5.0	2.5	9	6
12x25 Prostaff	13	4.1	16	220	4.2	2.08	9	4
8x25 Sportstar	11	4	10	429	8.2	3.13	8	10
10x25 Sportstar	11	4	10	342	6.5	2.50	12	6
7x50 Sports & Marine	41	7.0	18	393	7.5	7.14	17	51
8x32 Superior E	22	4.5	17	393	7.5	4.00	10	16
10x42 Superior E	26	5.7	17	314	6.0	4.20	13	18
12x50 Superior E	31	7.2	17	262	5.0	4.17	22	17
8x25 Travelite V	9	4.5	14	293	5.6	3.13	10	10



BINOCULAR SPECIFICATIONS

	Weight Ounces	Length Inches	Eye Relief mm	Field of View at 1000 yds	Field of View in Degrees	Exit Pupil mm	Near Focus Feet	Relative Brightness
<i>Nikon</i>								
9x25 Travelite V	9	4.4	12	293	5.6	2.77	10	8
10x25 Travelite V	9	4.3	11	262	5.0	2.50	13	6
12x25 Travelite V	9	4.3	11	220	4.2	2.08	10	4
8-24x25 Travelite V Zoom	12	4.6	13*	240*	4.6*	3.13*	13*	10*
<i>Pentax</i>								
8.5x21 Papilio	10	4.6	15	314	6.0	2.47	1.6	6
8x32 DCF SP	23	5.0	17	393	7.5	4.00	5	16
8x43 DCF SP	25	5.7	22	330	6.3	5.38	7	29
10x43 DCF SP	25	5.7	17	315	6.0	4.30	6	18
<i>Swarovski</i>								
8x20B-P	8	4.0	13	346	6.6	2.50	7	6
10x25B-P	8	4.6	11	283	5.4	2.50	17	6
8x32 EL	21	5.4	15	420	8.0	4.00	7	16
8.5x42 EL	29	6.5	18	387	7.4	4.90	8	24
10x32 EL	21	5.4	12	360	6.9	3.20	7	10
10x42 EL	28	6.0	15	330	6.3	4.20	8	18
7x42B SLC	34	6.5	19	420	8.0	6.00	13	36
7x50B SLC	41	7.9	23	372	7.1	7.14	17	51
8x30WB SLC	19	5.6	15	408	7.8	3.75	13	14
8x50B SLC	41	7.8	21	367	7.0	6.25	17	39
8x56B SLC	46	8.5	22	345	6.6	7.00	26	49
10x42WB SLC	31	5.8	14	330	6.3	4.20	13	18
10x50WB SLC	42	7.7	17	336	6.4	5.00	17	25
15x56ER SLC	47	8.5	13	231	4.4	3.73	26	14
<i>Swift</i>								
8x42 Ultralite	28	5.3	18	341	6.5	5.25	13	28
10x42 Ultralite	28	5.3	18	288	5.5	4.20	13	18
8.5x44 Waterproof Audubon/ED	25	5.8	17	430	8.2	5.18	10	27
<i>Vortex</i>								
8x42 Stokes DLS	27	5.5	18	383	7.3	5.25	5	28
10x42 Stokes DLS	27	5.5	17	308	5.9	4.2	5	18
<i>Zeiss</i>								
8x20B Pocket	7	4.0	11	346	6.5	2.50	10	6
10x25B Pocket	7	4.7	14	285	5.4	2.50	18	6
8x56 Victory	41	7.8	18	405	7.7	7.00	16	49
10x56 Victory	42	7.8	16	330	6.3	5.60	16	31
7x42 T* FL	26	6.5	16	450	8.6	6.00	7	36
8x42 T* FL	27	6.8	16	405	7.7	5.25	7	28
10x42 T* FL	27	6.8	16	330	6.3	4.20	7	18
8x32 T* FL	20	4.6	16	420	8.0	4.00	7	16
10x32 T* FL	20	4.6	16	360	6.6	3.20	7	10
<i>Monoculars</i>								
Sheltered Wings 6x16 Audubon	2	2.8	8	473	9.0	2.67	3	7
Vortex 8x25	6	4.3	10	430	8.2	3.13	17	10
<i>Spotting Scopes</i>								
Bushnell 80mm ED Elite	53	17.0	-	-	-	-	24	-
Kowa 82mm Millennium	49	15.0	-	-	-	-	18	-
Leica Televid	55	15.5	-	-	-	-	13	-
Nikon 60mm Sky & Earth	34	13.0	-	-	-	-	12	-
Nikon 80mm Sky & Earth	52	16.0	-	-	-	-	26	-
Nikon 60mm Fieldscope III	39	12.7	-	-	-	-	17	-
Promaster Ultralite	23	13	-	-	-	-	35	-
Swarovski ATS 65	40	12.8	-	-	-	-	10	-
Swarovski STS 65	39	12.0	-	-	-	-	10	-
Swarovski ATS/STS 80	46	14	-	-	-	-	16	-
Televid ST/ANG Televid 62	32/35	11.7	-	-	-	-	13	-
Televid APO ST/ANG Televid 62	35/38	11.5	-	-	-	-	13	-
Zeiss Diascope 65	39	11.8	-	-	-	-	13	-
Zeiss Diascope 85	51	13.6	-	-	-	-	16	-

The specifications on the spotting scope are measured with the zoom eyepiece at the lowest magnification (if applicable). All specifications are accurate as of publication, but may change at any time due to manufacturing variances. *At lowest power.

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