



Bushnell Legend 8x42



Leica Ultravid HD 7x42



Leupold Yosemite Porro Prism 6x30



Nikon EDG 7x42



Swarovski EL 8.5x42



Vortex Fury 6.5x32



Zeiss Victory 7x42 T* FL

THE AUDUBON GUIDE TO BINOCULARS

There are great choices in every price range, but the market is also littered with junk. Buy “bird-worthy” binoculars and you’ll enjoy birding more than you ever thought possible. Buy junk and you are apt to give up in frustration. This guide should help you make the right choice.

NUMBERS GAME

One of the first things you’ll notice when you go shopping is that all binoculars are described by two numbers, such as 8x42 (pronounced “eight by forty-two”). The first number tells you the magnification, or how many times the object is being enlarged. The second tells you the diameter of the objective lens (the lens at the fat end of the tube) in millimeters. Thus 8x42 binoculars magnify the image eight times and have an objective lens that is 42 millimeters in diameter. When comparing binoculars of equal quality, the bigger the difference between the two numbers, the sharper and brighter the image. There are, however, some practical limits. Binoculars with objectives larger than 42 millimeters will be too big and heavy for most people to carry around all day. Binoculars with objectives smaller than 30 millimeters will be lightweight and easy to carry, but they are not bright enough to show all the detail you need in poor light. Most experienced birders choose “full-sized” models with objective lenses that are 40 millimeters to 45 millimeters in diameter or “midsized” models with objective lenses from 30 millimeters to 35 millimeters. Full-sized binoculars will give you almost all the detail your eye is capable of seeing in all but the poorest light. Midsized models will sacrifice a little detail in poor light, but they make up for it in reduced size and weight.

HOW MUCH MAGNIFICATION?

Many beginners assume that the job of binoculars is to enlarge an image, so it must be better to buy the most powerful binoculars they can find. This is a mistake, because brightness and field of view are far more important than magnification. In fact, too much magnification

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makes binoculars useless. Keep in mind that binoculars that magnify an image eight times also magnify the small movements of your hand eight times. Ten-power binoculars magnify those movements ten times. The more the image moves, the less useful information you get from it. Since your brain must work harder to interpret a shaky image, higher-power binoculars will be tiring to use. Higher magnification also increases the distortion from rising hot air currents—called “heat shimmer”—which can make it impossible to get a sharp image when looking across a field or



a marsh. Ten-power (or higher) binoculars also slash the field of view and are not as bright as seven-power or eight-power models. I strongly recommend binoculars that magnify the image six, seven, or eight times. I prefer seven-power binoculars, and I’m not alone: Roger Tory Peterson used a pair of 7x42s when he worked on the last edition of The Peterson Guide. David Sibley used the same size when preparing the Sibley Guide.

CHECK OUT THE VIEW

A wide field of view makes it easier to find birds and to follow them when they fly. Prove this to yourself by taking a cardboard paper towel tube and holding it up to your eye while you try to find a robin. Then try to keep sight of your robin (through the tube) as it flies. Impossible, right? Next cut off two-thirds of the tube and try again with the remaining one-third. You have just dramatically increased the field of view. You will now find it much easier to locate the bird and then keep it in sight. Think of your binoculars as a pair of expensive tubes with a bunch of expensive glass inside. The wider the field of view, the easier it will be to find birds and track them as they move. Since birds move fast, being able to find them quickly with your binoculars is critical. You can find the field of view in the

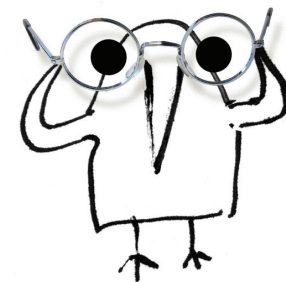
specifications sheet included with most binoculars. Makers describe the field of view of any given model as the diameter of the field you see from a distance of 1,000 yards. Some manufacturers instead give the angle of view, because they consider it a more useful number. To convert an angle of view to field of view, multiply the angle by 52.5 (to convert field of view to angle of view, divide by 52.5). Bird-worthy binoculars should have an angle of view of at least 6.5 degrees, which is equivalent to a field of view of 341 feet at 1,000 yards.

MAKING THINGS PERFECTLY CLEAR

>> Binoculars come in too many configurations to list. Models close to the following sizes are all suitable for birding: 6x32, 8x32, 7x35, 8x40 7x42, 8x42, or 8.5x44. >> Buy binoculars that have a single focusing knob located between the two barrels that turns one to one-and-a-half times. Don’t buy binoculars with separate focus adjustments on the two barrels—they’re too slow to be useful for birding. >> If you pay more than \$200 for your binoculars, they should be waterproof and nitrogen purged, so they don’t get “fogged” in humid conditions. >> You will be using your binoculars for many hours at a time, so make sure you buy the right pair. Do they feel good in your hands? Can you comfortably reach the focus knob? Can you see the entire field of view with your eyeglasses? All binoculars have a hinge to allow you to adjust the barrels to match the distance between your eyes. If you have closely set eyes, be sure you can adjust the barrels so you can see a single image. All binoculars can be adjusted

to allow you to compensate for differences in your eyes. To adjust yours, close your right eye and focus on an object 50 to 100 feet away using the center focus knob. Then, while keeping the same object in view, close your left eye and use the separate eyepiece adjustment to bring the object into sharp focus for your right eye. Your binoculars are now matched to your vision.

>> Don’t buy zoom binoculars or image-stabilized binoculars because they are heavy, give up a lot of brightness, and have a much-reduced field of view. >> Don’t ask for advice from non-birders. Hunters, boaters, and hikers may know a lot about optics, but they have different needs than birders.



DO YOU WEAR GLASSES?

It’s pretty simple: If you see better with eyeglasses, you should wear them while birding. Remember, however, that your eyes will be farther away from the binocular eyepiece than they are for non-eyeglass wearers. Unless your binoculars are designed to compensate for this, you will see a much-reduced field of view. Optics engineers design binoculars to project the image a few millimeters beyond the eyepiece; this distance is called “eye relief.” Eye relief tells you the distance your eye can be from the eyepiece and still see the entire field of view. Binoculars designed for birders offer eye relief of 15 millimeters to 20 millimeters and eyecups that extend and retract so you can adjust the distance between your eyes and the eyepiece. Use the eyecups in the fully retracted position with your eyeglasses and in the fully extended position without glasses. Before you buy a pair of binoculars, make sure you can see the full field of view while wearing your glasses. Some people, because of their face shape and vision, can experience image blackout if their eye is too far from the eyepiece. They should position the eyecup between full up and full down; this will give them a good compromise between field of view and ease of use.

TAKING CARE

>> Don’t touch the lenses with your fingers. Never clean the lenses with tissue, toilet paper, paper napkins or towels, or newspaper—all contain wood fibers that will scratch and eventually destroy the lens coatings essential to your binoculars’ optical performance (and can’t be repaired or replaced). Never use commercial glass cleaners. They may contain ammonia or isopropyl alcohol, which will destroy the coatings.

>> Clean your binoculars only with good-quality lens tissue or a micro-fiber lens cloth from an optics or camera store. Also buy a can of compressed air and lens-cleaning fluid whose label states clearly that it’s safe to use with lens coatings. First use compressed air to blow away loose dust. Next spray the lens cleaner on the cloth and gently clean the lenses. Then gently wipe them with a dry part of the cloth.

>> If you eat while you are birding, use the lens covers that came with your binoculars. Although they are called “rain guards,” think of them as “food guards.” Coffee, orange juice, goat cheese, and hummus are not good for your binoculars.

A FEW RECOMMENDATIONS

There are other bird-worthy binoculars for sale. But I have used each of the following models and recommend them based on my experience and on feedback from fellow birders. All will give you years of birding enjoyment. I favor seven-power binoculars, because they are very bright and tend to have panoramic fields of view, but I also like eight-power models. The price ranges shown below are based on commonly published prices from Internet retailers.

ALPHA CLASS (LESS THAN \$2,500)

These models are the best available, so select the one that feels good to you. Yes, they’re expensive, but take the plunge and you will never be sorry. These are the current state of the art.

Leica Ultravid HD 7x42 (or 8x42, or 8x32)

Nikon EDG 7x42 (or 8x42, or 8x32)

Swarovski EL 8.5x42 (or 8x32)

Zeiss Victory 7x42 T* FL (or 8x42, or 8x32)

ALMOST ALPHA CLASS (LESS THAN \$1,000)

These models come very close to the state of the art and cost a lot less.

Nikon Premier 8x42

Zeiss Conquest 8x40 BT* (or 8x30 BT*)

BEST-VALUE CLASS (LESS THAN \$500)

These offer sharp, bright images with accurate color rendition and little observable distortion. All are durable and waterproof. You’re not settling for an inferior product if you buy one of these instead of a hyper-expensive pair, because all are far superior to anything that existed 20 years ago. And, hey, you can use the savings to pay for a birding trip.

Bushnell Legend 8x42

Leupold Cascades 8x42

Leupold Katmai 6x32

Nikon Monarch 8x42 PC ATB

Swift Audubon Roof Prism 8.5x44

Vortex Fury 6.5x32

“GET IN THE GAME” CLASS (LESS THAN \$100)

These afford surprisingly good images and wide fields of view. (The Leupold is great for kids because of its compact size and light weight.) Neither is waterproof or fog-proof.

Leupold Yosemite Porro Prism 6x30

Nikon Action 7x35



What You Can Do With Your Old Binoculars If you’re considering a new pair of binoculars, it doesn’t mean you should toss the old ones or stick them in a closet and forget about them. Consider contacting the Birders Exchange Program at the American Birding Association (aba.org/bex), which takes old, waterproof pairs in good working condition. Optics for the Tropics (opticsforthetropics.org) also supplies much-needed binoculars to conservation groups in the Caribbean and Latin America.