

# Mid-Sized Binoculars Review



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**BIRD WATCHER'S**  
DIGEST



## PETE'S TIPS

BY PETE DUNNE



For too many years, birders in the market for binoculars have been driven by the misapprehension that bigger is better, that a 10x binocular must necessarily offer a superior image because it magnifies greater than an 8x, or that a 42mm objective is better than a 32mm because it means a larger exit pupil (and more light).

Sorry. It ain't that simple. What is better is what works for you, and for many or most birders, an 8x32 binocular is more

user-friendly than a 10x42. User-friendly means you see things more quickly and easily, which, in bird study, is paramount.

Yes, 10-power gives you a lot of *wow*, but at the cost of a smaller field of view, less depth of field, and, often, diminished close-focus capability—features that are key to locating birds in woodland situations at close quarters. Yes, a larger objective lens means more light in low-light conditions, but until the exit pupils of your eyes expand

enough to accommodate a wider straw of light, all that extra light is going to fall outside your pupil and serve for nothing.

For most people, the difference between the functional light gathering capacity of a 42mm and 32mm objective lens is measured in the first and last 15 minutes of the day.

Here's another overlooked advantage to a 32mm objective: greater depth of field. More of the world is in focus near-to-far. Like the F-stop setting on a camera, a wide-open setting translates to a flatter image, but a narrower exit pupil means more depth of field. This is particularly important to people whose visual acuity differs mark-

edly between left and right eyes, or whose visual elasticity has been compromised by age—or as in my case, by a stroke.

So, if you are now frustrated by those 10x42 binoculars that worked great back when your eyes were limber, try an 8x32. They won't restore your youth, but they will help you find birds more quickly and easily. As for your venerable old 10x, pass them down to some needy young birder on a budget. Win-win. 🦅

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**BWD**  
marketing  
director  
**Sarah Clark**  
tries out  
an **8 x 32**  
binocular.

## Mid-Sized Binoculars

DIANE AND MICHAEL PORTER

Binoculars are magic. They give us supernatural sight and make the sport of birding possible. However, if you don't have them with you, it won't matter how wonderful they are back on the shelf. You need binoculars you'll always want to take along.

Mid-sized binoculars fill this need. They're lightweight and easily portable. You can tuck one inside a jacket or cargo pocket if you're traveling where you don't want to display your valuable optics for all to see.

This article compares 13 mid-sized 8x32 binoculars. A chart shows their specifications and scores. Here are the features we studied.

**Resolution:** With smaller objective lenses, 32mm binoculars theoretically cannot deliver quite the resolution of 42mm models. However, at 8 power it's hard to actually see any difference. Computer-controlled lens grinding and polishing have advanced optical performance so much that many excellent binoculars, even 32mm, now produce images with more detail than one's eyes can see.

That is probably why the top five binoculars in our survey all tied for first place in resolution. The others were also surprisingly good. To rate the binoculars' optical quality, we set up a stable tripod stand with a beanbag

rest. Across a large room, we posted a standard USAF-1951 optics resolution chart that let us translate the level of detail we could see into a numeric score for each binocular. Diane, who has 20–20 eyesight, did the testing. Resolution was the most heavily weighted component of the overall scores.

**Close Focus:** How close a binocular will focus depends both on the optics and on the individual's eyes. Manufacturers may not all measure it the same way, so we tested all the binoculars using Michael's eyes. Because people's eyes differ in how close they can focus, another person doing the same test might produce different measurements, but the scores would sort in the same order. Close focus counted toward the overall scores. Yay, butterflies!

**Diopter Adjustment Mechanism:** The diopter adjustment lets you compensate for focusing differences between your right and left eyes. Once you set the diopter correctly, you don't need to change it. You can focus just by turning the central focus knob.

Good diopters are easy to adjust and have a marked scale. The best also lock so that they can't be accidentally changed. The adjustment is usually on the right eyepiece. Better yet, some let you click out the central focus

knob and then use *it* to adjust the diopter. The chart shows which kind of diopter each binocular has. We scored each diopter and incorporated the result into the overall score.

**Immersion—Eye Relief, Eyecup Range, and Field of View:**

A really great binocular gives the experience of immersion, the sense of being drawn into the scene. The binocular almost seems to disappear, and your attention is entirely on the bird.

To get immersion requires synergy between several influences: field of view, eye relief, eyecup range, and *you!* All interact to determine whether you can position the binocular at the perfect distance from your eyes, enabling you to see the full field of view.

Here's how to use the specifications in the chart to help figure out what binocular might best work for you.

**Eye Relief:** If you wear glasses, eye relief is paramount. If the eye relief is too short, you see only the center of the image. You get robbed.

The binoculars in this test ranged from 13.3mm to 20mm of eye relief, according to the manufacturers. However, measuring eye relief is not standardized, so you can't entirely rely on the manufacturers' figures. It's best to test binoculars with your

own hands, eyes, and glasses.

If you wear glasses, 16mm is generally considered the minimum eye relief. However, everyone's glasses are different. Granny glasses require less eye relief. Aviator glasses need more.

**Eyecup Range:** There's an optimum distance between your eye and the eyepiece. Too close, and black circles close in from the sides. Too far, and you can't see the entire image. There's a sweet spot where you get the whole image. Eyecups twist up or down to let you get that distance right. If you wear glasses, twist in. If you do not, twist out.

For optimum steadiness, your eyecups should rest against your face or glasses. How much eyecup length you need is personal, depending on how deep-set your eyes are and what style of glasses, if any, you wear. We measured eyecup range with a caliper and included it in the chart. In general, longer eyecup range provides more flexibility.

**Field of View:** A wider field of view increases your chances of spotting the bird. It also contributes to the sense of immersion. A high score is good, but unless the eye relief and eyecup range also fit you, you may not experience the full field of view.

The importance of these factors varies from person to person.

Therefore, they did not count toward the overall scores. You'll find some comments in the individual reviews.

### Individual Binocular Reviews

Although we don't have room to include individual reviews of all the binoculars in the test, here are a few that stood out.

Swarovski EL 8x32  
Optical resolution score: 10.0  
Overall score: 9.8



The slender Swarovski EL earned the top overall score. Its optics and ergonomics are superb. Its open-bridge design makes it easy to hold it with one hand.

It works for everyone, glasses wearer or not. Thanks to the long eyecup range and the generous 20mm of eye relief, everybody gets the full field of view—423 feet at 1,000 yards. Without eyeglasses, you can rest

both the top and the bottom of the eyecups comfortably against your eye sockets, while eyeglass wearers can brace the binocular securely against their glasses.

The diopter adjustment mechanism clicks into play when you pull up on the focus knob, at which point it focuses the right eyepiece. You see a clear, numbered scale. The focus knob, having been transformed into the diopter adjustment, turns smoothly and has indents, so you can easily adjust it, click by click. Push the focus knob down again, and the knob returns to normal focusing. There's a second super lock on the end of the focus knob that prevents the diopter setting from being changed by accident.

The objective lens covers are semi-permanently attached. The lens covers drop neatly and don't flap up and cover the glass at a crucially wrong moment. Eyecups twist out to three positions that hold once you set them yet are easy to adjust.

**Leica Ultravid HD-Plus 8x32**  
**Optical resolution score: 10.0**  
**Overall score: 9.6**

The first thing that strikes you about this binocular is how small and compact it is. At just 4.5 inches long, it will fit in a pocket or tuck out of sight into a jacket—nice for travel.



It's well knit, with clean design. The focus knob turns with blissful smoothness and precision. The central hinge has just the right degree of resistance.

Even though this Ultravid is small, its focus knob is over 1¼ inches long, easy to use with one finger or two. Even in a moment of excitement, your finger lands naturally on the focus knob.

Leica's diopter adjustment is actually two knobs, stacked end to end. In regular use they turn as one knob. However, when you pull up on the top section, it clicks away from the lower section. It then turns independently, to change the focus of just the right eyepiece, creating a customized diopter setting. Click the top knob back down into place, and your personal diopter adjustment is locked in. An easy-to-read scale on the end of the center hinge lets you confirm your diopter setting at a glance.

The manufacturer's specification for the eye relief is 13.3mm. Glasses wearers might want to try this binocular before buying.

**Kowa Genesis XD 33  
8x33 DCF**  
Optical resolution score: 10.0  
Overall score: 9.5



We judged the Kowa Genesis XD a great value. Its resolution score matched that of the Swarovski EL and the Leica Ultravid, each of which costs almost twice as much. Its field of view was one of the most generous in the survey, providing a satisfying sense of complete immersion in the scene for users who do not wear glasses.

If you're not using eyeglasses, you can rest the binocular comfortably against your eye sockets. If you *do* wear glasses, however, you may want to test the Genesis in person, as the 15mm of eye relief may prove insufficient.

The diopter adjustment mechanism, on the right barrel, is one of the best. It has a lock to prevent it from getting accidentally turned off its setting. A nifty feature of the diopter ring is the saddle rest for your thumb,

which lets you turn the adjusting ring smoothly and securely.

The focus knob is textured metal and finger-friendly enough, though not quite so grippy as some of the rubberized focus knobs of other binoculars.

**Leica Trinovid HD 8x32**  
Optical resolution score: 10.0  
Overall score: 9.5



The 8x32 Trinovid HD has a minimum focus distance of only 3.3 feet, far closer than any of the other binoculars in our study. This is a huge feature for observing butterflies, or hummingbirds at feeders. And although the Leica Trinovid HD costs less than half as much as the Leica Ultravid, it achieved the same top resolution score.

So, we had to ask... if you are going for Leica, what do you give up if you buy the Trinovid HD rather than the Ultravid HD-Plus? Both binoculars have exemplary resolution, focus knobs, center hinges, and eyecups.

With a field of view of 372 feet at 1,000 yards, the Trinovid HD has a narrower field of view than the Ultravid's 404 feet. Yet the Trinovid HD has much longer eye relief (17mm) than the Ultravid (13.3mm). Therefore, a person wearing glasses may *see* as wide a field of view with the Trinovid HD as with the Ultravid.

The Trinovid HD has the common style of diopter adjustment mechanism, a knurled ring on the right eyepiece. There is no lock to prevent you from moving it accidentally, but a conspicuous red line on the ring tells you at a glance where it's set.

We regard this binocular as a best buy.

**Zeiss Conquest HD 8x32**  
Optical resolution score: 10.0  
Overall score: 9.2



Although the price of the Zeiss Conquest HD is about half that of the most expensive binoculars in our survey, the resolution score was just as high. We

deemed it another best buy, with great optics and comfort in use.

It feels substantial in the hand, as a full-sized binocular might, even though at 22.2 ounces it's considerably lighter. It's comfortable to hold. You can reach the focus knob without strain, and the strap lugs don't bump your hand. The focus knob is pleasant to turn.

Eyecups twist out with four set positions, which have a soft lock to maintain the eyecups where you put them. You adjust the diopter by a knurled ring on the right barrel. There are minimal markings and no lock.

The Conquest's 16mm eye relief seems fine both with and without glasses. The field of view is a generous 420 feet at 1,000 yards. When we conducted our own field-of-view tests, we found that the Conquest HD had a wider field of view than any other binocular in the survey.

**Zeiss Terra ED 8x32**  
Optical resolution score: 9.1  
Overall score: 8.8



The binocular with the highest resolution score for any model under \$899 was the \$400 Terra ED. It's a hand-friendly binocular. The focus knob turns smoothly and is placed so that the index finger reaches straight across without having to angle away, while the other fingers rest easily on the bridge.

We appreciate the detail of the strap attachment. An unobtrusive, thin, nylon cord goes through the lugs, and the strap's quick-release attachment lets you hand the binocular to a friend. The eyecups twist up and down with no indents or soft locks, but with enough resistance to hold their position.

The diopter adjustment mechanism has the right tension to hold the setting. A scale or clearer markings would have been a plus.

The Terra got the top overall score among the mid-priced binoculars.

**Vortex Diamondback 8x32**  
**Optical resolution score: 8.9**  
**Overall score: 8.7**

At just 4.4 inches long, the Vortex Diamondback is one of the most compact binoculars in our study. It has quite good optical clarity and brightness, and it got the top overall score in the inexpensive category.

It's hand friendly. The hinge



and focus knob move smoothly, with the right degree of resistance. The diopter adjustment mechanism is above average. You line up a tiny green-on-green bump on the body to some unnumbered indentations on a knurled wheel. The indentations are black against black and not particularly visible. However, once the ring has been set, the degree of turning resistance should keep it in place.

The eye relief of 15.6 mm may be skimpy for some glasses wearers. Wearing his aviator glasses, Michael found he didn't get the entire field of view, but with her smaller glasses, Diane found it okay. If you wear glasses, you might want to try it before you buy it.

### **Conclusion**

Our advice: If you wear glasses, go for a binocular that has long eye relief so you can enjoy the big picture. And if at all possible, before you buy one, try to find a way to look through it first, with your own

glasses. Notice if you can see the same field of view while wearing your glasses as you see with your glasses off. You'll also find out how the binocular suits your hands.

Being able to see fine details is part of the enjoyment of birding, and often it makes the difference in a successful identification. Birding is an inexpensive sport (if you don't count travel), and your binocular is your most important piece of equipment. Get the best binocular you can afford. Maybe even stretch a little. Money is replaceable. Days spent birding are not.

Binoculars are a personal choice. And for many birders, mid-sized binoculars are not too big, not too small, but just right.

#### **The Chart—A few words of explanation**

**Street Price** is the current offering on the internet at the time of writing. By the time you read this, prices may have changed.

**Field of View** and **Eye Relief** are the manufacturer's specifications. Note that they may not all be consistently measured in the same way.

**Weight, Length, and Eyecup Range** are the authors' measurements.

**Resolution Score** and **Diop-ter Score** were mapped so that the top scores were a 10. These scores cannot be compared to scores in other articles.

***The Swarovski EL diopter is on the focus wheel.***



***The Leica Trinovid diopter.***



***The Kowa Genesis diopter.***



**Overall Score** encompasses the resolution score, close focus, and the diopter score, with the greatest weight on resolution. A perfect score is 10. 🦅

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Manufacturer Name	Swarovski EL	Leica Ultravid HD-Plus	Kowa Genesis XD33 DCF	Leica Trinovid HD	Zeiss Conquest HD
<b>High End • \$899 to \$2199</b>					
Size	8x32	8x32	8x33	8x32	8x32
Street Price	\$2199	\$1999	\$1150	\$899	\$930
Hinge Design	Open Bridge	Standard	Standard	Standard	Standard
Weight (oz.)	21.0	18.9	20.9	22.9	22.2
Length (in.)	5.6	4.5	5.2	5.1	5.2
Field of View @1,000 yds. (ft.)	423	404	420	372	420
Eye Relief (mm.)	20.0	13.3	15.0	17.0	16.0
Eyecup Range (mm.)	11.1	8.0	8.6	9.1	9.1
Close Focus (ft.)	6.7	6.9	5.3	3.3	4.8
Resolution Score	10.0	10.0	10.0	10.0	10.0
Diopter Location	Center	Center	Eyepiece	Eyepiece	Eyepiece
Diopter Score	10.0	9.6	9.0	8.4	8.0
<b>Overall Score</b>	<b>9.8</b>	<b>9.6</b>	<b>9.5</b>	<b>9.5</b>	<b>9.2</b>

Manufacturer Name	Zeiss Terra ED	Kowa BD 32-8XD Prominar	Vanguard Endeavor ED II	Opticron Traveler BGA ED
<b>Mid Priced • \$299 to \$400</b>				
Size	8x32	8x32	8x32	8x32
Street Price	\$400	\$425	\$299	\$329
Hinge Design	Standard	Standard	Open Bridge	Standard
Weight (oz.)	17.7	20.0	19.1	16.0
Length (in.)	4.9	4.8	5.0	4.6
Field of View @1,000 yds. (ft.)	405	394	377	429
Eye Relief (mm.)	16.5	17.0	17.5	19.0
Eyecup Range (mm.)	9.8	7.4	8.4	6.9
Close Focus (ft.)	4.5	4.1	6.0	5.5
Resolution Score	9.1	8.9	8.0	8.9
Diopter Location	Eyepiece	Eyepiece	Eyepiece	Eyepiece
Diopter Score	8.0	7.0	8.6	7.0
<b>Overall Score</b>	<b>8.8</b>	<b>8.4</b>	<b>8.3</b>	<b>8.3</b>

Manufacturer Name	Vortex Diamondback *	Opticron Oregon 4 PC	Celestron Trailseeker	Opticron Savanna R PC
<b>Entry Level • \$149 to \$190</b>				
Size	8x32	8x32	8x32	8x33
Street Price	\$190	\$149	\$165	\$149
Hinge Design	Standard	Standard	Standard	Open Bridge
Weight (oz.)	16.6	17.8	16.2	15.6
Length (in.)	4.4	4.3	4.8	5.0
Field of View @1,000 yds. (ft.)	426	423	409	366
Eye Relief (mm.)	15.6	15.0	15.6	20.0
Eyecup Range (mm.)	6.4	6.7	6.7	12.0
Close Focus (ft.)	4.3	5.4	7.2	12.0
Resolution Score	8.9	8.9	7.1	7.0
Diopter Location	Eyepiece	Eyepiece	Eyepiece	Eyepiece
Diopter Score	8.0	7.0	7.0	7.0
<b>Overall Score</b>	<b>8.7</b>	<b>8.3</b>	<b>7.3</b>	<b>6.9</b>

\* Vortex updated Diamondback in August 2019, after this comparison was conducted.



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