

OPTICS

• Jacob Gottfredson •

MORE FOR LESS Budget minded optics

I am often asked what binocular or scope someone should buy for some use or another. My first question is, "To what use is the intended purpose?" My second question is, "How much are you willing to spend?" The answer to the second seems to be a universal constant: \$200 to \$300.

Throughout my two decades of being an optics writer and evaluator, I have been a bit of an optics snob, I guess, putting my efforts into glass costing many times that amount. But the demand of most people has caused me to begin looking at more affordable options. Below are a couple of great binos at a great price.

I had the opportunity to evaluate Carson's XM-HD 8x42mm Series Binoculars over the last 3 or 4 months. I was thoroughly impressed with them. I did my standard battery of tests and a lot of bird watching with the wife. Carson has not only gone the extra mile by instrument testing their glass against the opposition, but has made their testing public. That is quite exciting in the sporting optics industry, something camera lens makers have done for years. I hope Carson spurs other sporting optics manufacturers to follow suit.

Here is glass with BAK-4 lenses, HD coatings, fully multi-coated, O-ring sealed, phase coated, waterproof and fog proof and has one of the highest light transmission ratings in the industry for just under \$300.

Most optical prisms in this price range are made from borosilicate (BK-7)

glass. More expensive models use barium crown glass (BAK-4). BAK-4 is higher quality glass, yielding brighter images and high edge sharpness. The XM's clarity, resolution, and contrast are excellent, and light transmission rivals that of much higher priced binos.

They are armored coated, with a relatively large center focus ring and stiff-to-move diopter, which is good. A bit on the large size, they are still small and light enough to carry in the field and feature a tripod mount as well.

Carson's warranty is every bit as good as other leading manufactures. They will replace or repair any damaged bino for \$12, no matter the reason.

I rate these binoculars high in any price range. View other models on their Web site.

Bushnell's Legend Ultra-HD Binocular

For those of you who think of Bushnell as K-Mart and Swarovski as Neman Marcus as I have, think again. Bushnell's Elite series is top-of-the-line in the \$1K range. But Bushnell carries binos well under \$300 that will blow your mind for clarity, resolution,

contrast, and extremely high light transmission. I have spent considerable time with their Legend Series 8x42mm Ultra-HD binos. I am truly impressed. Don't confuse these with their Legend series that does not carry the Ultra-HD label.

I must admit if I had the dinero, I too would walk around with a \$2,000 Swarovski binocular hanging from my neck. My wife got into bird watching, and I have been tagging along (more fun than I thought). In any case, it has allowed me to test many binoculars made for the "can't live without it" crowd to those made for fellas who—like me—must. Birders must mortgage their homes for the price of their binocular, spotting scope, and digital camera. But need they? I often wonder the same thing when my wife comes home with all those facial creams and a hole in my bank account. Luckily, she never reads anything I write.

These Legend Ultra-HD binos have it all: Fully multi-coated lenses, BAK-4 prisms, Rainguard HD coating, armor, water and fog proof, and ED glass. They have incorporated a tripod mount and the case and accessories are great. The case is a hard nylon. Inside are a neck strap, harness, and a microfiber cloth bag to house them in. Another feature I believe every bino should have are the flip down objective lens covers that stay in place, preventing loss.

The center focus is large and easy



The Carson XM-HD 8x42mm (left) offers very good optical quality, armor, water and fog proof design, good internals, fully multi-coated lenses, and are protected by a great warranty. They represent good viewing for most budget-minded buyers. The Bushnell Legend Ultra-HD binocular (right) is another great binocular for under \$300. Short and relatively light, this bino has it all. The very short focus would make it excellent for birders. Besides having ED lenses, great accessories come with it.



to turn, while the diopter wheel locks in place to prevent it from turning, thus not spoiling your image when time is of the essence. The eyecups, like the Carson, can be moved out for non-eyeglass wearers and in for those who require them.

The Legend uses ED lenses, i.e. extra low dispersion fluorite glass, which enhances color resolution and contrast, and eliminates chromatic aberration and color-fringing. Normally such glass is costly, and I tell people they can live without it unless they are using a spotting scope with a camera. But for this price, why not? You will learn to like their proprietary lens coatings as well, and the magnesium chassis makes for a lighter bino. I rate this binocular high as well.

Unfortunately, a lot of quality glass does not appear on the shelves of stores most people frequent. The Internet provides a means of studying the specifications of glass. Think about your use. That will give you some idea of what to look for in size and weight. Will it always be in the vehicle or on the deck? Will you carry it for hours in the mountains? Do you need very close focus for birds? Do you need something ultra light or high power for searching for elk on those far ridges? Do you prefer Porro or roof prism binoculars?

CARSON XM-HD SPECIFICATIONS

MAKER: CARSON OPTICAL, INC.
35 GILPIN AVENUE, HAUPPAUGE, NY 11788
(800) 967-8427, WWW.CARSONOPTICAL.COM

MODELS:	XM-842HD	XM-042HD	XM-050HD	XM-832
MAGNIFICATION:	8x42mm	10x42mm	10x50mm	8x32mm
PRISM:	BAK-4	BAK-4	BAK-4	BAK-4
LENS COATING:	FMC	FMC	FMC	FMC
FIELD OF VIEW:	330'	314'	262'	420'
EYE RELIEF:	22mm	17mm	19mm	15.5mm
CLOSE FOCUS:	13.1'	16'	19'	9.8'
WEIGHT (OUNCES):	24.3	24.3	24	20.6

BUSHNELL LEGEND ULTRA HD SPECIFICATIONS

MAKER: BUSHNELL OUTDOORS
9200 CODY, OVERLAND PARK, KS 66214
(800) 423-3537, WWW.BUSHNELL.COM

MODEL:	Legend 198042	Legend 191042
MAGNIFICATION:	8x42mm	10x42mm
PRISM:	BAK-4	BAK-4
LENS COATING:	FMC	FMC
FIELD OF VIEW:	426'	340'
EYE RELIEF:	17.2mm	15.2mm
CLOSE FOCUS:	6.5'	6.5'
WEIGHT (OUNCES):	22.4	22.5

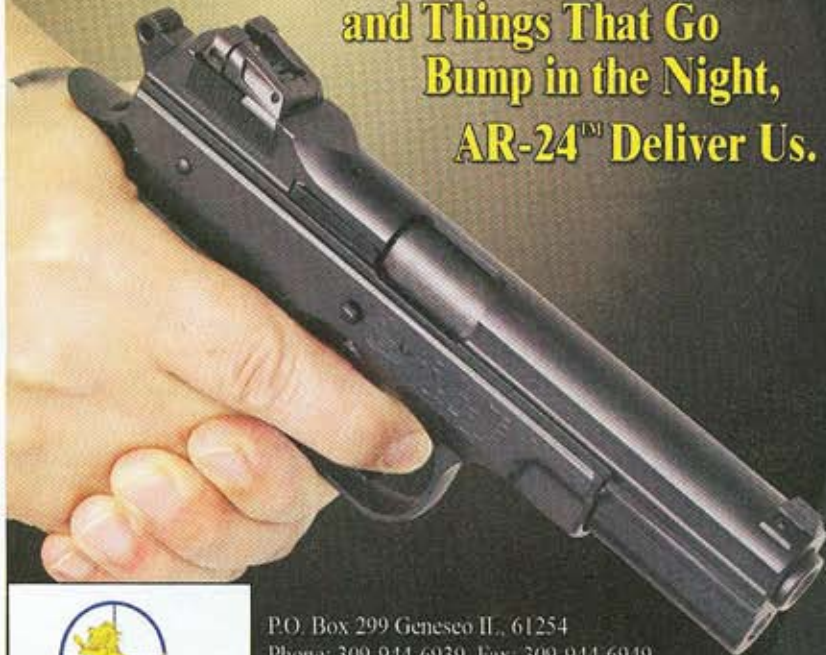
Do you need a large field of view?

After you have made those decisions, look for fully multi-coated lenses, water and fog proof, good lens coatings, armor, extendable eye cups, and BAK-4 prisms. Remember it is very

difficult to get a strong, reliable chassis for much under \$300. Barrel alignment and a strong enough mechanism to retain that alignment seldom come in a \$40 bubble wrap at your local discount store.

GUNS

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ArmaLite® is well known for manufacturing rifles you can stake your life on, and the same is true for our pistols. The AR-24™ is a sleek high capacity 9mm pistol built with classic forged-steel construction and is finely machined for great fit and finish. It isn't the type of pistol that fits your hand like a plastic coffee cup... it fits like it's part of you. At home, on duty, or at your business you can be confident when the AR-24™ is there with you.

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