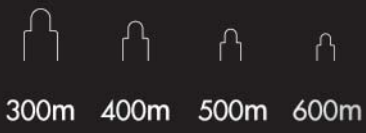




VORTEX® VIPER R/T

28mm TACTICAL
BINOCULAR



VORTEX® VIPER R/T

With a tough and durable roof prism design and brilliant optics, the Viper® R/T can be relied on in the worst conditions thanks to Vortex's premium XD glass and XR lens coatings.



The 28mm Viper R/T binocular is equipped with the Vortex R/T Ranging reticle, designed to assist the user in calculating distances.

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Optical Quality

The Viper R/T binocular features fully multi-coated optics and phase-corrected prisms for the ultimate in light transmission and brightness in any light condition.

Rugged Design

The 28mm Viper R/T binocular has a rugged roof prism design. An internal focus mechanism, o-rings at all open points, and argon purging contribute to the waterproof, dust proof, internally fogproof design of this binocular.



Binocular Adjustments

Adjusting the Eyecups

The Viper R/T binocular feature winged eyecups that block out stray light and rotate for a custom fit. These eyecups roll up and down so any viewer can take advantage of the long eye relief and enjoy comfortable, full-field viewing even when wearing eyeglasses or sunglasses.



Without eyeglasses or sunglasses, keep the eyecups fully extended.



With eyeglasses or sunglasses, roll down the eyecups.

Adjusting the Interpupillary Distance

The interpupillary distance (IPD) is the distance between the centers of the left and right eye pupils. Match the IPD of your eyes to that of the binocular by rotating the binocular barrels inward or outward until you see a single image that is free of shading.



IPD

Adjust the IPD for a custom fit and better views.



Focusing the Binocular

Choose an object that is about 20 yards away from you and follow this two-step process to properly adjust the focus. Be sure to stay in the same spot until you have adjusted both the center focus and diopter.

1. Adjust the center focus

Start by closing your right eye or covering the right objective lens with your hand. Adjust the center focus wheel until the image is in focus. Leave the center focus in this position as you adjust the diopter.



2. Adjust the diopter

Start by closing your left eye or covering the left objective lens with your hand. Look through your right eye and adjust the diopter until the object is in focus. Make note of this diopter setting in case you need to set it again.



From this point on, you will only need to use the center focus dial.

Adjusting the Reticle Focus

The reticle focus is located on the left ocular as you hold the binocular. This focus is used to adjust the reticle image until it is clear and sharp. Focusing the reticle is easiest when closing the right eye while setting this focus. When looking at a white wall or the sky, adjust the reticle focus until the reticle image is clear and sharp.

Once set for a particular user, the reticle focus can be left in place.



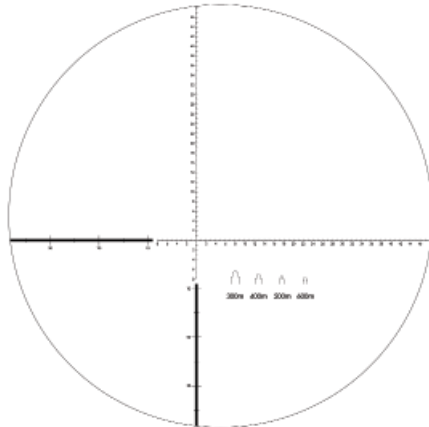
Caution

Binoculars are not intended for looking at the sun, or any other intense light source. Such viewing could damage the retina and cornea of your eyes—even to the point of causing blindness.

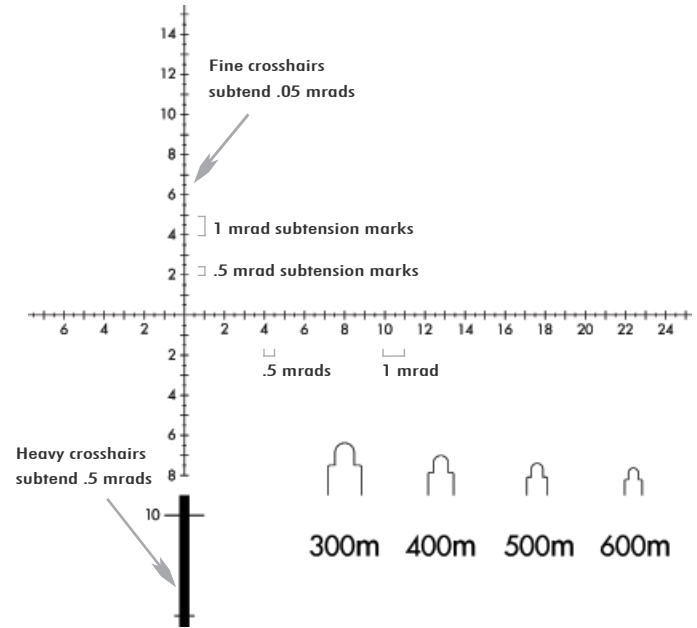
Using the Viper R/T Reticle

Reading the R/T Reticle

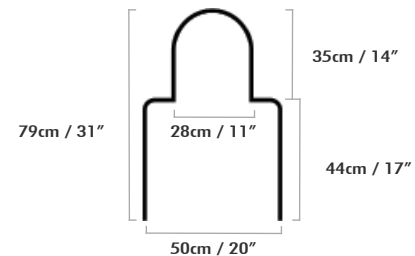
The R/T reticle is based on a form of angular measurement called the milliradian (mrad for short). These angular measurements allow a user to calculate ranges when comparing the reticle to objects of known dimension. The key to effective ranging using this reticle is knowing common objects in your vicinity and their measurements.



The Viper R/T reticle also uses a secondary system of quick ranging based on a human silhouette. See the section on *Quick Ranging with Silhouettes*.



All silhouette dimensions are accurate at the listed ranges.



Precision Ranging with mrad

Mrad measurements are very effective for ranging using simple formulas. Knowing the size of the target or a nearby object is essential to using these formulas.

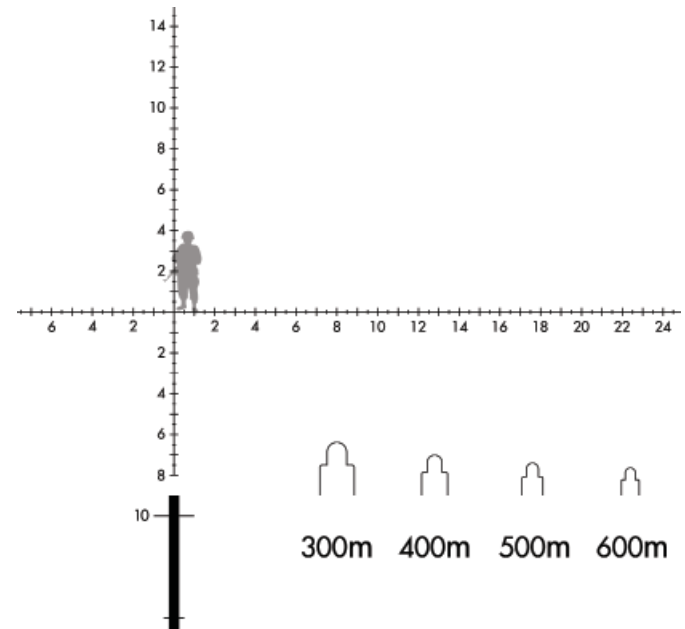
$$\frac{\text{Target Size (Yards)} \times 1000}{\text{Measured mrad}} = \text{Range (Yards)}$$

$$\frac{\text{Target Size (Inches)} \times 27.8}{\text{Measured mrad}} = \text{Range (Yards)}$$

$$\frac{\text{Target Size (Meters)} \times 1000}{\text{Measured mrad}} = \text{Range (Meters)}$$

Be sure the reticle is in focus before ranging (see Adjusting the Reticle Focus). Using either the vertical or horizontal mrad scale, place the reticle on the target of known dimension and read the number of mrad spanned. Maximum accuracy in ranging will be obtained by calculating exact mrad measurements—try to estimate mrad measurement in 1/10s if possible. To help calculate fractions of mrad, the Viper R/T reticle uses both 1 and .5 mrad graduations on the crosshair. Fine crosshairs subtend .05 mrad.

Accurate measuring will depend on a very steady hold. Be sure to solidly brace the arms when measuring or use a tripod mount for maximum accuracy. Once you have an accurate mrad reading, use one of the formulas to calculate the distance.



Ranging a 6-foot man (2 yards) at 4 mrad yields 500 yards.

$$\frac{2 \times 1000}{4 \text{ mrad}} = 500 \text{ Yards}$$

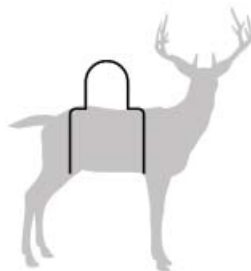
Quick Ranging with Silhouettes

The human silhouettes used in the Viper R/T reticle are based on an average 20-inch shoulder width and 11-inch head width. To use, simply match the person being ranged to the closest silhouette in shape and read the indicated yardage. As before, best accuracy will be obtained by bracing the arms or using a tripod mount.



300m

Other dimensions of the silhouettes may be used to compare to objects of known dimension to obtain range estimation. In this example, a deer is ranged using the silhouettes. Using a deer's typical back-to-brisket dimension of 17 inches, the 17-inch shoulder height of the silhouettes can be used for quick range estimation.



300m

Caring for the Lenses

Maintain the optical brilliance of the Viper R/T binocular by keeping the lens surfaces free of dirt, oils, and dust.

Protect Lenses While Out in the Field

Make use of the rainguard to protect the lenses when not viewing. Store the Viper R/T binocular in its carry case.

Keep Lenses Clean

Along with normal use comes the need to clean the binocular lenses. Follow these guidelines for cleaning:

1. Remove any dust or grit from the lenses before wiping. Use a can of pressurized air or a soft camel hairbrush (acrylic optical brushes also work well).
2. Clear lens of smudges, fingerprints, or eyelash oil. Fog the lenses with your own breath and wipe with the non-abrasive lens cloth included with the Viper R/T binocular.

Other cleaning options:

Cleaning fluid and optical paper can also be used. However, you should never use facial tissue, heavy cotton, or flannel clothing on lenses—these materials can scratch the lens surfaces.

Accessories

The Case

The soft case of the Viper R/T provides protection for the binocular when not in use and allows for an easy carry in the field.



Care of Optics

If the optics are exposed to moisture, keep the caps off and allow the optics to dry out completely before putting them in the case for storage.

The Rainguard and Lens Covers

The Viper R/T binocular comes with a soft, waterproof rainguard that completely covers the eyepieces. For convenient use, simply snap the rainguard around the neckstrap. Tethered objective lens covers protect lenses.



The Neckstrap

Attach the padded neckstrap to the binocular in three simple steps. Begin with the right barrel of the binocular and repeat the process for the left barrel.



1. Push a few inches of the strap through the neckstrap attachment point on the binocular.



2. Loop the strap over the attachment point, then thread the strap through the strap buckle.

3. Secure the end of the strap by slipping it through the strap loop.





VORTEX®
VIPER R/T

Vortex Service and Repair Policy

Unconditional Lifetime Warranty

Vortex Optics wants you to use your Viper R/T binocular under any conditions with complete confidence—that's why our VIP warranty is straightforward and simple:

- Fully transferable
- No warranty card needed
- No receipt needed

Rest assured, if this binocular should ever require repair, all you need to do is contact Vortex for absolutely free service.

Call 800-426-0048 or e-mail service@vortexoptics.com.

Vortex Optics
2120 West Greenview Drive
Middleton, Wisconsin 53562
USA

Visit Vortex Optics at vortexoptics.com.



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