ATHLON OPTICS

RETICLE MANUAL

ATSR3 SFP IR MOA

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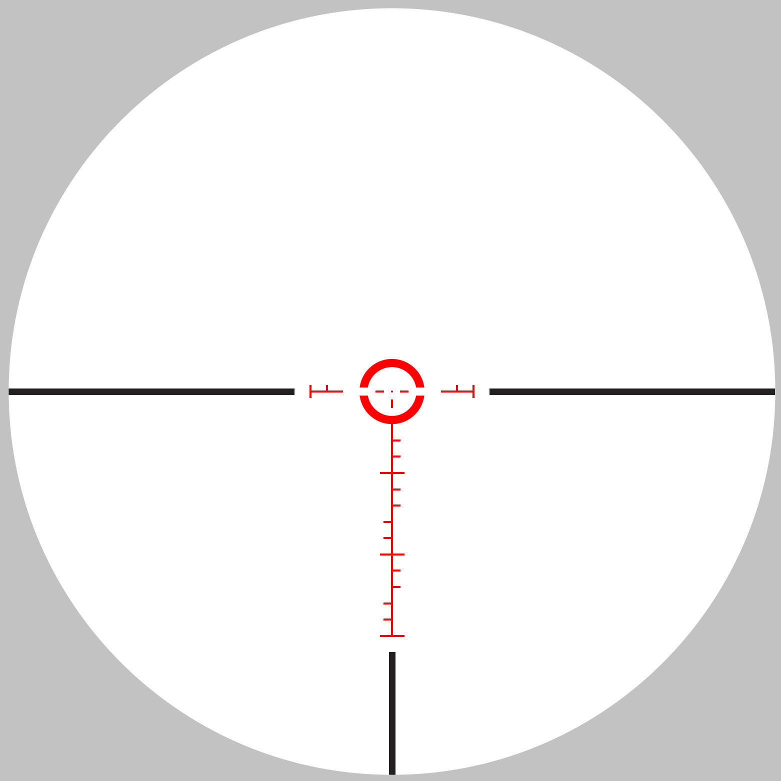
The ATHLON® ATSR3 SFP IR MOA Reticle

ATSR3 SFP IR MOA reticle has a large illuminated circle that allows a shooter to super impose on a target to make a quick shot. The inner diameter of the center circle is 12 moa, which is specially designed to fit the targets being used in most service rifle matches. The center dot helps a shooter to lock the target in. The 2 moa hash marks with 2 moa gaps in between the marks and the center dot help the shooter have precise windage holdover.

Application: *Short and Mid Range Shooting for both Tactical and Hunting*



Note: *The reticle image shown above will appear differently among different models due to different magnification and location of the reticle.*

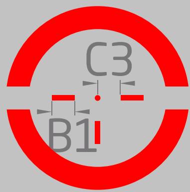
Reticle Subtensions

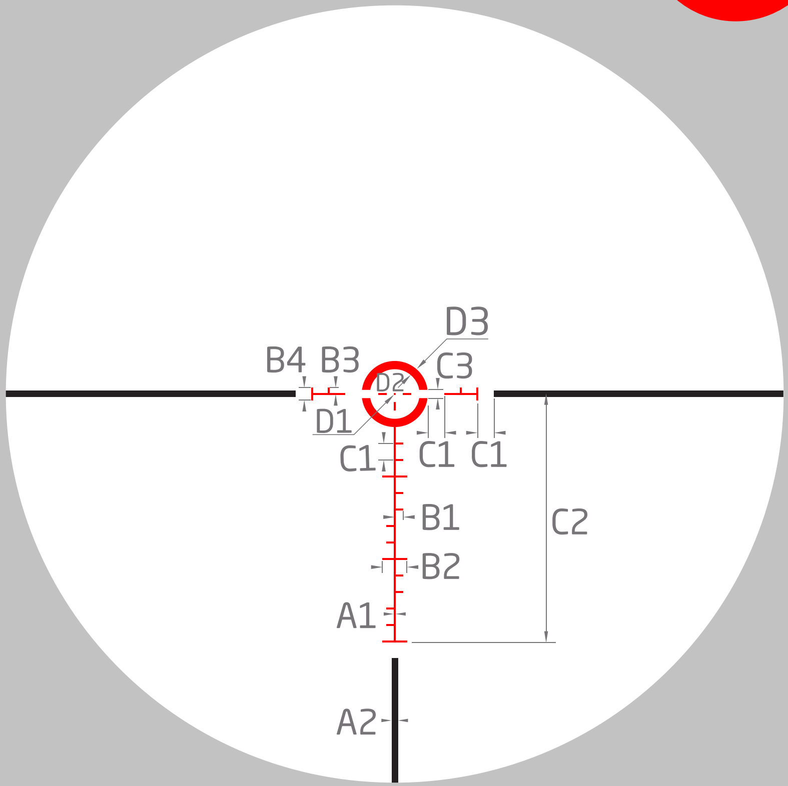
The ATSR3 SFP IR MOA reticle is based on the minute of angle, a unit of angular measurement, usually shortened to moa. A “moa” is defined as “one minute of an angle”. As a full circle has 360 degrees, and each degree is composed of 60 minutes (60’). thus there are 360 (degrees) x 60 (minutes) = 21,600 minutes in a circle. Since there are 360 degree in a circle, we can get 360 degree/21600 minutes=0.016667°/minute. If the target is 100 yards (3600 inches) away, we can use a formula, 3600*TAN(RADIANS(.016667)), to get 1.047 inches which means 1 moa equals to 1.047 inches at 100 yards. Many people just round up the 1.047 inches to 1 inch @100 yards. If you are using metric system, formula 100000mm*TAN(RADIANS(.01667)) gets you that 1 moa equals to 29.1mm @100 meters.

The ATSR3 SFP IR MOA reticle is located at the second plane which stays in between erector tube and ocular lens. The size or the appearance of a second focal plane reticle does not change when you try to zoom in or zoom out, however the relative ratio between reticle and your target changes all the time because your target appears bigger or smaller when the magnification changes.

The subtensions of a second focal plain reticle and ranging capability are only accurate at certain magnification and due to this nature, the subtensions of the reticle are only valid at 4.5x.

Example





ATSR3SFP IR MOA	A1	A2	B1	B2	B3	B4
SUBTENSIONS IN MOA	0.45	1.5	2	6	1.5	3
	C1	C2	C3	D1	D2	D3
	4	60	2	0.5	12	16

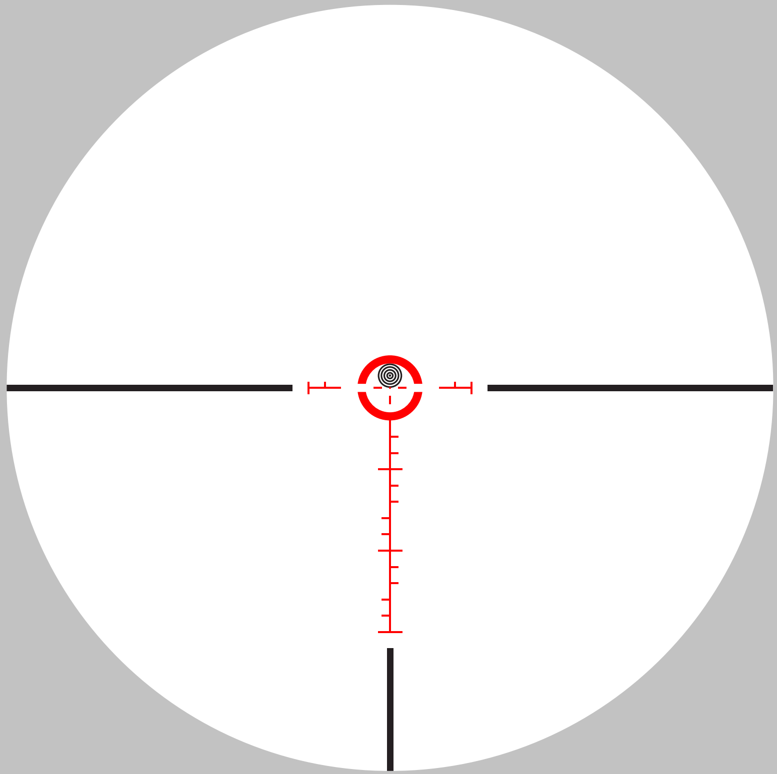
Distance Ranging

$$\frac{\textit{Height of Target (Inches) x 100}}{\textit{MOA Reading on Reticle}} = \textit{Distance to Target (Yards)}$$

$$\frac{\textit{Height of Target (CM) x 34.4}}{\textit{MOA Reading on Reticle}} = \textit{Distance to Target (Meters)}$$

As the height of target and moa reading on the reticle are two key variables in this equation, you have to get an accurate value for those two as mush as possible. First all you want to put your rifle on a steady rest so you can get an accurate reading of the target height on the reticle. If needed using the smallest measurement on the reticle to get the most accurate readings. Second use your best knowledge on the height of the target, such as 72 inch high fence or 45 inch shoulder high of white tail deer, to give a value of the target height. Once you got the reading on reticle and your estimate of the target height, you can just simply use above equations to calculate the distance to your target.

Example



Reading a 3-foot target (36 inches) at 6 moas gives 600 yards

$$\frac{\textit{36 inches x 100}}{\textit{6 moas}} = \textit{600 yards}$$

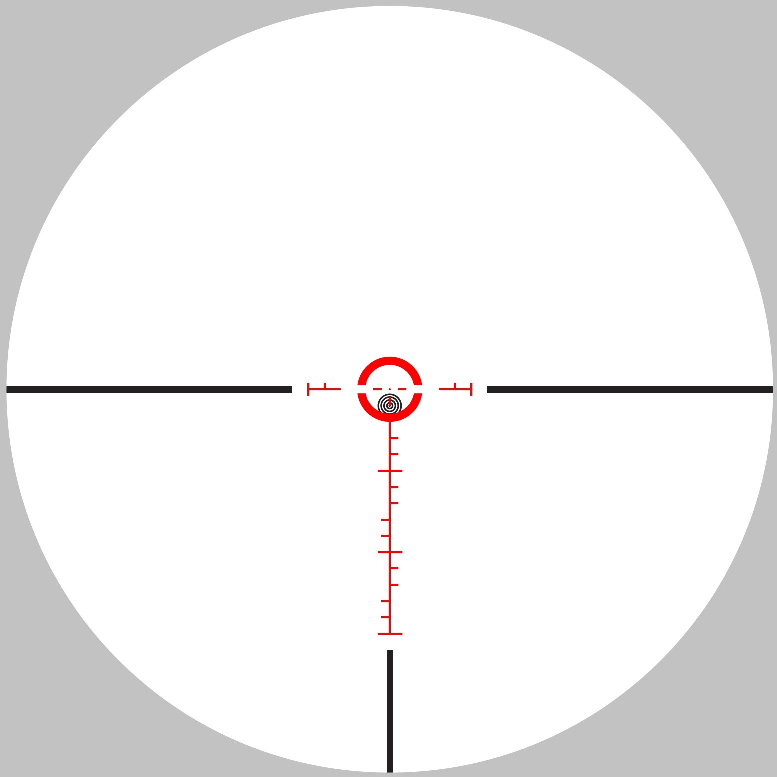
Holdover For Compensating Bullet Drop

To be able to use the elevation holdovers effectively, you have to know the distance to your target and bullet trajectory (bullet drop in inches or moas). Since many bullet ballistic charts highlight bullet drops in inches and 1moa equals to 1.047 (rounded up to 1 inch) at 100 yards, 2 inches at 200 yards, and 10 inches at 1000 yards, etc, we can use those to calculate the holdover position in moa on this reticle.

For example, under no wind condition, if you knew your target is at 300 yards and your ammo has a 12 inch bullet drop at that distance, you want to use 4 moa holdover point. Here is how you got the 4 moa: since 1 moa equals to 1 inch x 3 =3 inches at 300 yards, and then 4 moas equal to 4 x 3 inches =12 inches at 300 yards, you want to hold the 4 moa drop point to compensate the 12 inch bullet drop.

To achieve ultimate precision, it is always a better idea to develop your own D.O.P.E (Data of Previous Engagement)chart so that you can refer back to it for specific bullet drop compensation under different ambient environment and weather condition.

Example



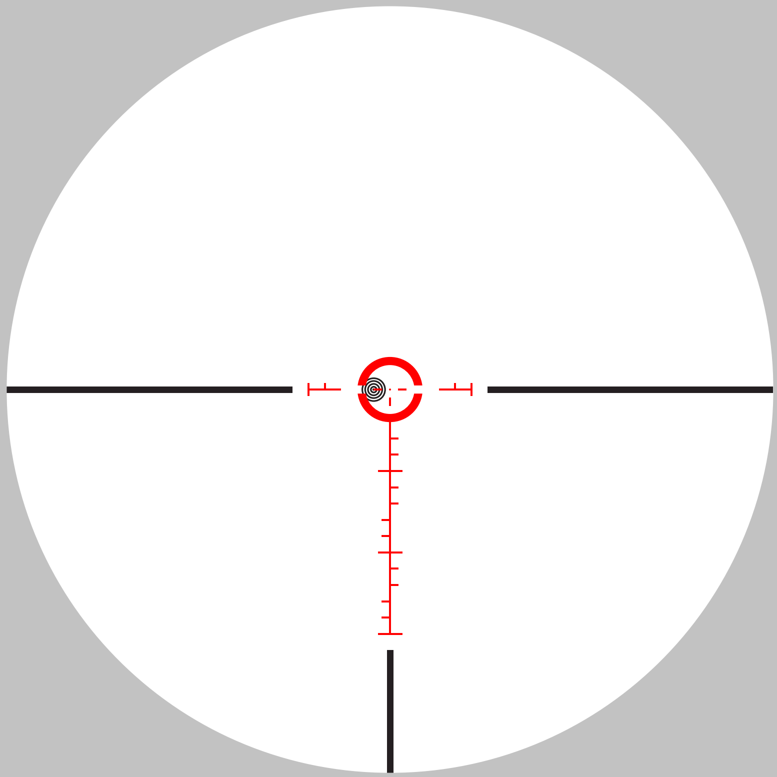
4 moa / 12 inch holdover for a target at 300 yards out. No wind.

Holdover for Wind Correction

Holdover for Wind Correction

The flying time of a bullet, the velocity and direction of the wind and the "slippery-ness" of the bullet expressed in BC (Ballistic Coefficient) determine your holdover for wind correction. Once again you have to understand the impact of those three factors on your bullet's flying path in terms of inches or moas and calculate how much holdover you have to hold, and then finding the corresponding holdover position on the reticle is a much easier task to accomplish.

Example



4 moa wind correction for 10 mph wind from right to left at 400 yards

Elevation turret has been dialed up to compensate bullet drop, just simply use the 2 moa hash mark to hold over for wind correction.

THE ATHLON GOLD MEDEL LIFETIME WARRANTY*

Your Athlon product is not only warranted to be free of defects in materials and workmanship for the lifetime of the product. Athlon will also repair or replace, at no charge to you, your product if you should damage it through normal use. No receipt is needed, no registration is required. This is a commitment that Athlon Optics will be the best product you can buy for your money.

***** *This warranty does not cover damages caused by deliberate damage, misuse, theft or maintenance provided by someone other than the Athlon Authorized Service Department.*

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LIFETIME ATHLON OPTICS WARRANTY

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