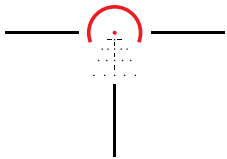
ATHLON
RIDICULOUSLY GOOD OPTICS

ATSR4 SFP IR MOA

Midas BTR GEN2 HD Riflescope

SECOND FOCAL PLANE

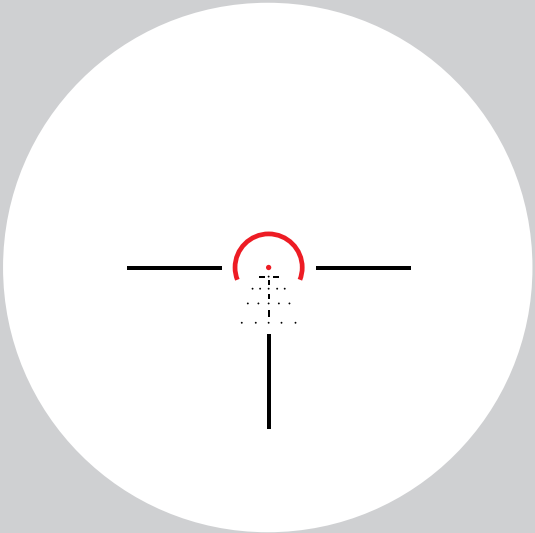


RETICLE MANUAL

THE ATHLON® ATSR4 SFP IR MOA RETICLE

The ATSR4 SFP IR MOA reticle is specifically designed for 3 gun competition (68 grain hornady and 69 grain sierra cartridge) and any Nato 5.56/.223 caliber rifle with hold over points for both bullet drop and wind. The 1.4 moa red dot is perfect for zeroing your rifle at 200 yard and the dots below the center red dot are for targets at 300, 400, 500, and 600 yard. The dots on horizontal lines below the center are specially designed for holding over 5 mph and 10 mph wind.

Application: Short and Mid Range Hunting and Tactical application

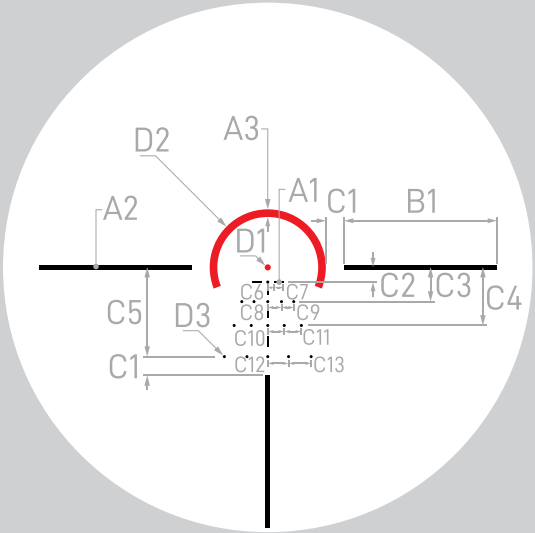


RETICLE SUBTENSIONS

The ATSR4 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 degrees/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 down 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 ATSR4 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 6x for 1-6x24 scope.



SUBTENSIONS IN MOA

A1	A2	A3	B1	C1	C2	C3	C4	C5	C6
0.3	0.8	1.25	25	3	2.4	5.6	9.5	14.6	1.07
C7	C8	C9	C10	C11	C12	C13	D1	D2	D3
1.5	2.25	2	2.7	2.8	3.4	3.7	1.4	19	0.5

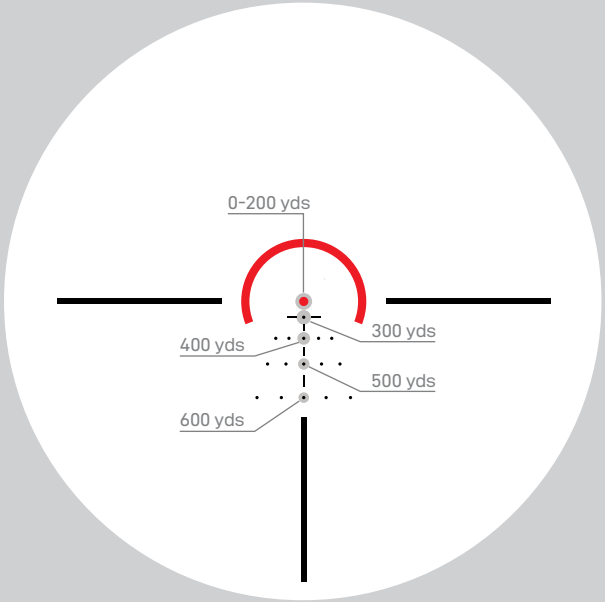
HOLDOVER FOR COMPENSATING BULLET DROP

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 moa). 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 moa 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

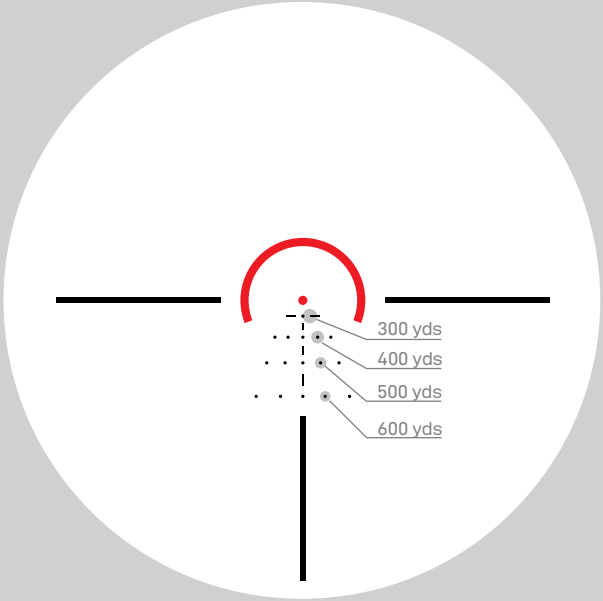


Bullet holdovers for target at every 100 yards. No wind.
Zeroed at 200 yards, ballistic calculation based on 68 grain hornady and 69 grain sierra cartridge.

HOLDOVER FOR WIND CORRECTION

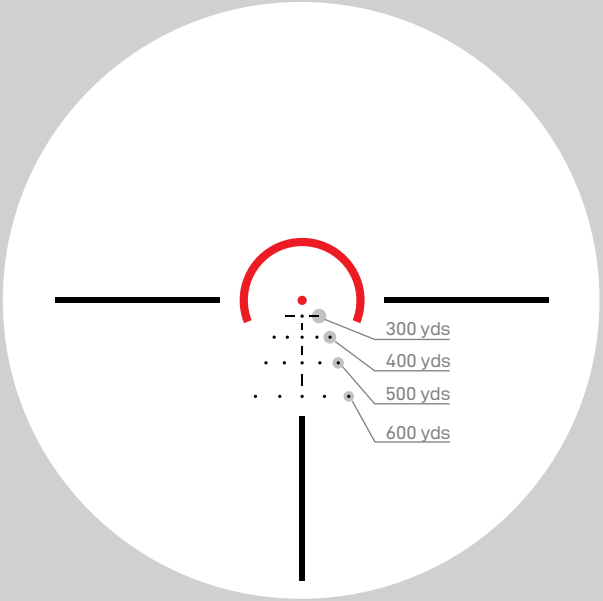
The flying time of a bullet, the velocity and direction of the wind and the "slippery-ness" of the bullet expressed in BC (Ballistic Coefficient) determine your holdover for wind correction. Once again you have to understand the impact of those three factors on your bullet's flying path in terms of inches or moa 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 1



5 mph wind from left to right, holdover for wind correction at every 100 yards.

EXAMPLE 2



10 mph wind from left to right, holdover for wind correction at every 100 yards.

THE ATHLON
GOLD MEDAL LIFETIME WARRANTY*

Demand the most from your equipment. When things go unexpectedly or accidents happen, rest assured, Athlon Optics carry a lifetime transferable warranty. Athlon guarantees to repair or replace your product if damaged through normal use. No charge; No receipt; No Registration required.

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