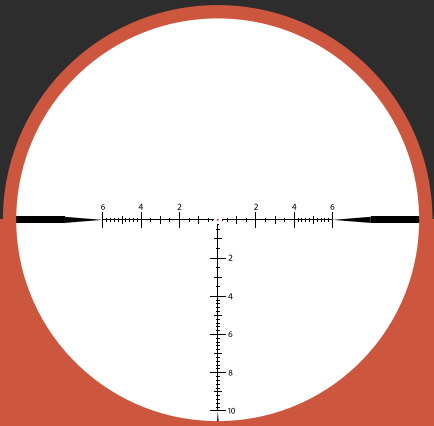
ATHLON
RIDICULOUSLY GOOD OPTICS

APRS-H2 SFP IR MIL

Ares HLR Riflescope

SECOND FOCAL PLANE



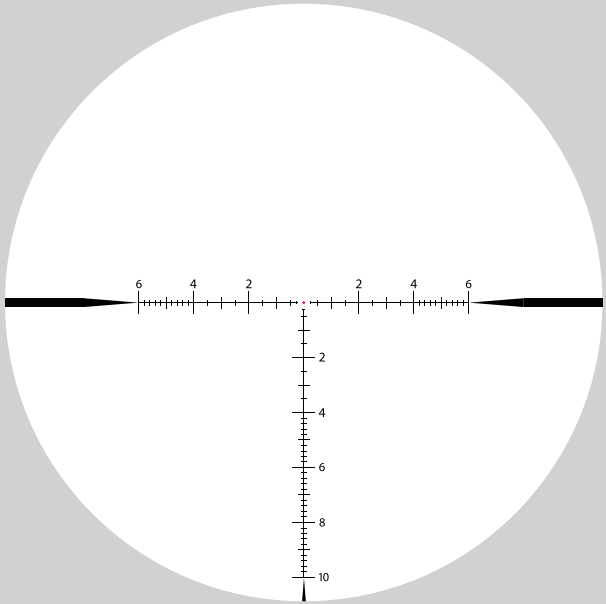
RETICLE MANUAL

THE ATHLON® APRS-H2 SFP IR MIL RETICLE

Athlon's APRS-H2 SFP IR MIL reticle is designed with the long range shooter in mind. With a center illuminated dot and .5 mil subtensions out to 4 mils then .2 mil subtensions there after, hold overs are very easy and quick. The thick outer crosshair tapers down to a point leading to an illuminated floating center dot and with no upper reticle post means less target obstruction which leaves an open field of view, to more easily spot your target.

For 2.5-15x42 reticle subtension is valid at 15x.
For 4-24x50 reticle subtension is valid at 16x.

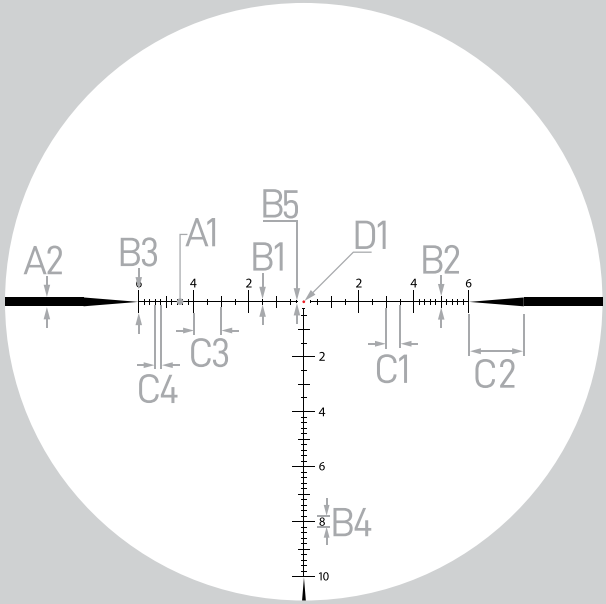
Application: Hunting



RETICLE SUBTENSIONS

The APRS-H2 SFP IR MIL reticle is based on the milliradian, usually shortened to mrad or mil. A “mil” is defined as “one thousandth”, or 1/1000. A mil is 1/1000 of a radian (a unit of angular measurement). Since there are 6.2832 radians in a circle, and each radian is chopped up into a thousand pieces, there are 6.2832 x 1000 = 6,283.2 mils in a circle. Since there are 360 degree in a circle, we can get 360 degree/6,283.2 mils=0.573 degree/mil. If the target is 100 yards (3600 inches) away, we can use 3600 Tan (.0573 degree) to get 3.6 inches which means 1mil equals to 3.6 inches at 100 yards.

The APRS-H2 IR MIL 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 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.



SUBTENSIONS IN MIL

A1	A2	B1	B2	B3	B4
0.03*	0.3*	0.2	0.4	0.8	0.4
B5	C1	C2	C3	C4	D1
0.1	0.5	2	1	0.2	0.1

2.5-15x42: A1=0.05, A2=0.4
4-24x50: use table above

DISTANCE RANGING

Equations for ranging distance to a target using mils:

$$\frac{\textit{Height of Target (Yards) x 1000}}{\textit{MIL Reading on Reticle}} = \textit{Distance to Target (Yards)}$$

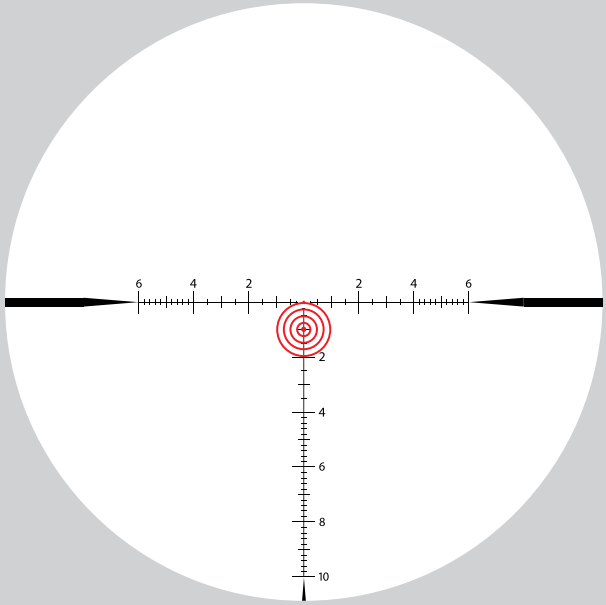
$$\frac{\textit{Height of Target (Meters) x 1000}}{\textit{MIL Reading on Reticle}} = \textit{Distance to Target (Meters)}$$

$$\frac{\textit{Height of Target (Inches) x 27.8}}{\textit{MIL Reading on Reticle}} = \textit{Distance to Target (Yards)}$$

Because the actual, or at least closest estimate of, the height of your target is a key part of above equations, you need to know either the target's height or the height of nearby objects with known dimensions.

To ensure an accurate reading, place your rifle on as steady a rest as possible before measuring. If needed, use the smallest reticle markings available to obtain the most precise measurement.

EXAMPLE



Reading a 3-foot target (1 yard) at 2 mils gives 500 yards

$$\frac{\textit{1 yard x 1000}}{\textit{2 mils}} = \textit{500 yards}$$

HOLDOVER FOR COMPENSATING BULLET DROP

To use elevation holdovers effectively, you need to know both the distance to your target and your bullet's trajectory (drop in inches or mils). Since most ballistic charts list bullet drop in inches, it's important to understand that 1 mil equals 3.6 inches at 100 yards, 7.2 inches at 200 yards, and so on. This value scales with distance.

To calculate your holdover in mils:

1. Determine how many inches 1 mil represents at your distance:
   3.6 × (distance in yards ÷ 100)
2. Divide your bullet drop (in inches) by that number

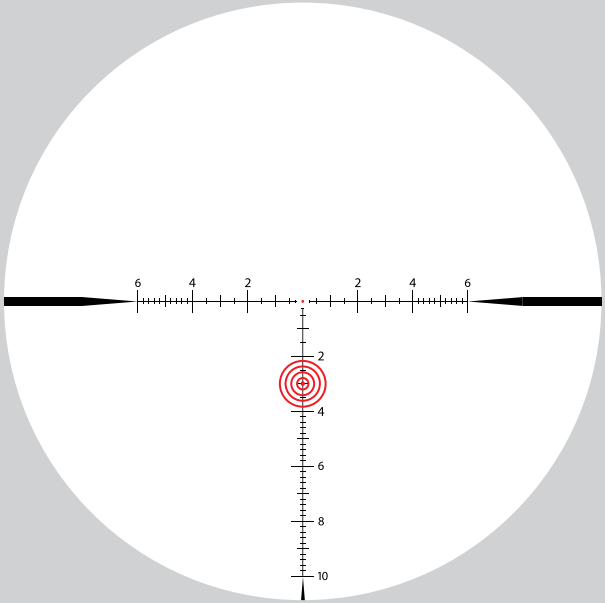
Example: 500 yards, 54-inch drop

- At 500 yards: 3.6 × 5 = 18 inches per mil
- 54 ÷ 18 = 3 mils

Using this example, if your target is at 500 yards, holding at the 3 mil mark compensates for the 54-inch bullet drop (under no-wind conditions).

For maximum precision, it's always a good idea to develop your own D.O.P.E. (Data of Previous Engagements) chart. This allows you to reference specific bullet drop data under different environmental and weather conditions.

EXAMPLE



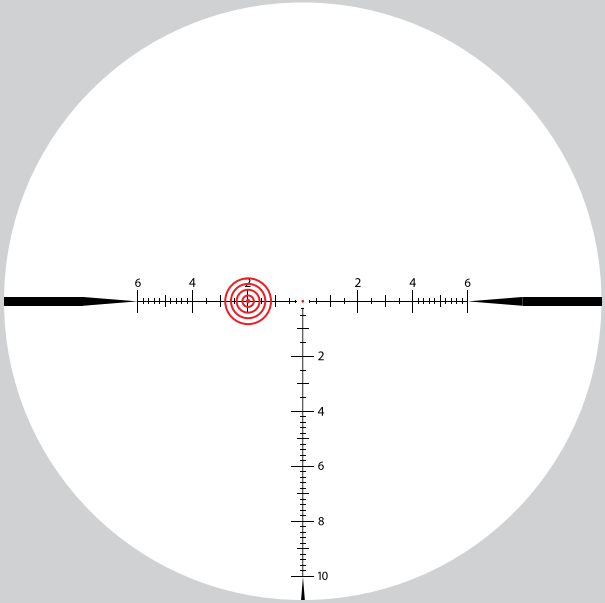
3 mil /54 inch holdover for a target @ 500 yards out. No wind.

HOLDOVER FOR WIND CORRECTION AND MOVING TARGET

The APRS-H2 SFP IR MIL reticle offers 6 mil span in hash marks from center to left and right, and 10 mil down from center. This provides great visual reference to allow you to spot your holdovers efficiently.

The bullet's time of flight, the velocity and direction of the wind, and the bullet's "slipperiness," expressed as its ballistic coefficient (BC), all determine your wind hold. Understanding how these three factors influence the bullet's trajectory, whether in inches or mils, allows you to calculate the required hold. Once calculated, finding the corresponding hold position on the reticle becomes much simpler.

EXAMPLE

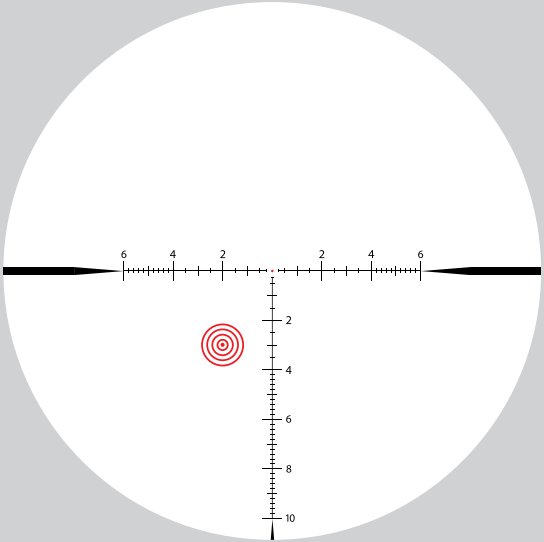


2 mil wind correction for 15 mph wind from right to left at 500 yards. Elevation turret has been dialed up to compensate bullet drop, just simply use center horizontal cross line to holdover for wind correction.

USE VISUAL CROSS POINT FOR WIND CORRECTION AND BULLET DROP

Instead of adjusting for drop and wind separately, you can aim using a single reference point. Use the reticle's hash marks to find where your bullet drop hold and wind hold intersect, and aim at that point. This "virtual cross point" combines both corrections into one hold.

EXAMPLE

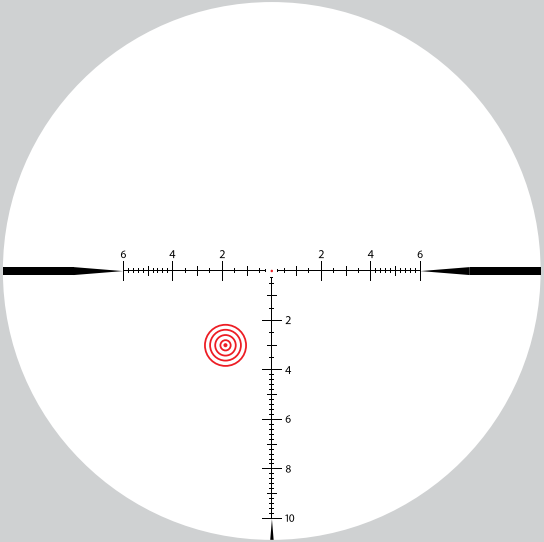


Use a 3 mil hold to compensate for a 54 inch bullet drop at 500 yards, and a 2 mil wind hold for 15 mph wind from right to left. Aim where those two holds intersect on the reticle.

HOLD LEAD CORRECTION FOR A MOVING TARGET

To hit a moving target, you must apply lead by aiming ahead of its path. The amount of lead depends on the distance to the target, its speed, the bullet's time of flight, and wind conditions. As a general rule, your lead should match the distance the target travels during the bullet's flight time, with any necessary wind correction added or subtracted.

EXAMPLE



Apply a 1.95 mil lead for a target moving left to right at 2 mph at 500 yards. With a bullet flight time of 1 second, the target travels approximately 2.94 feet. No wind correction is needed.

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.

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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