

THE KAHLES AMR RETICLE NEW: RETICLE CENTER 2 MILS UP



We at KAHLES share the passion and professionalism of ambitious shooters. We passionately support their aspiration to continually enhance performance. We do this with intuitive simple and smart products, based on profound user insight, such as the AMR reticle. The AMR reticle has been designed by Desert Tech, an US weapon producer (<https://deserttech.com/>). We have asked Ales Zakelj, our KAHLES target group manager for sport shooting, to explain the AMR reticle.



How to work with the KAHLES AMR (Advanced Milling Reticle) – by Ales Zakelj

“Over the last decade KAHLES optics has become a major player in the dynamic long range shooting community. For shooters who engage targets under time pressure on distances up to 1.000 m or more, the K525i is a state-of-the-art rugged and reliable precision tool.

Significant progress in performance has been made in several ways. For example, with one of the most precise parallax setups. It is so precise, that you can use it for a quick distance estimation. Or with the unique combination of integrated parallax adjustment in the elevation, left side windage (for right hand shooters) and CCW adjustment direction (counterclockwise), which brings ergonomics to a totally new level.

At KAHLES we recognize that for any riflescope, but particularly for dynamic long-range shooting, the right reticle choice is decisive for success. That’s why we place special emphasis on our selection of tactical reticles for our flagship scope K 525i. My favorite is the AMR reticle, which I personally use for dynamic long-range competitions, PRS and extreme long-range competitions like Mo2Km/Ko2m.

The “Advanced Milling Reticle” is a tactical reticle for long range experts which has already proved its functionality in our legendary K 624i. The simple and logical 1 Mil square system gives the shooter fast orientation for elevation and windage corrections in normal shooting positions as well as even for toughest 90° shots. For the K 525i version we have moved the center of the reticle 2 Mils up from the optical center, thus increasing the working range of the reticle”

MAIN FEATURES AND TECHNIQUES

The following examples shall illustrate different features and strategies how to use the AMR reticle. The graphs we use are based on the STRELOK PRO App, using the data from Ales’s weapon system.

<u>Data used for calculations:</u>	Caliber:	.338 Lapua Magnum
	Bullet:	Lapua Scenar
	Bullet weight:	300 grs
	Bullet speed:	860 m/s
	Zero distance:	100 meters

Simple and intuitive 1 mil square system

The basic pattern of the AMR is based on 1 Mil squares, with 0.2 Mil dots. This design allows an intuitive and simple placement of the target by either covering the target with the dot system or placing the target within a square. This system is beneficial in various situations, especially when you work with wind correction.

If your click value is a round number, you have nice lines to quickly cover your target. But when the click value is something like for example 63 clicks, it already slows you down. But we are all used to utilize the elevation. When we need to work with wind

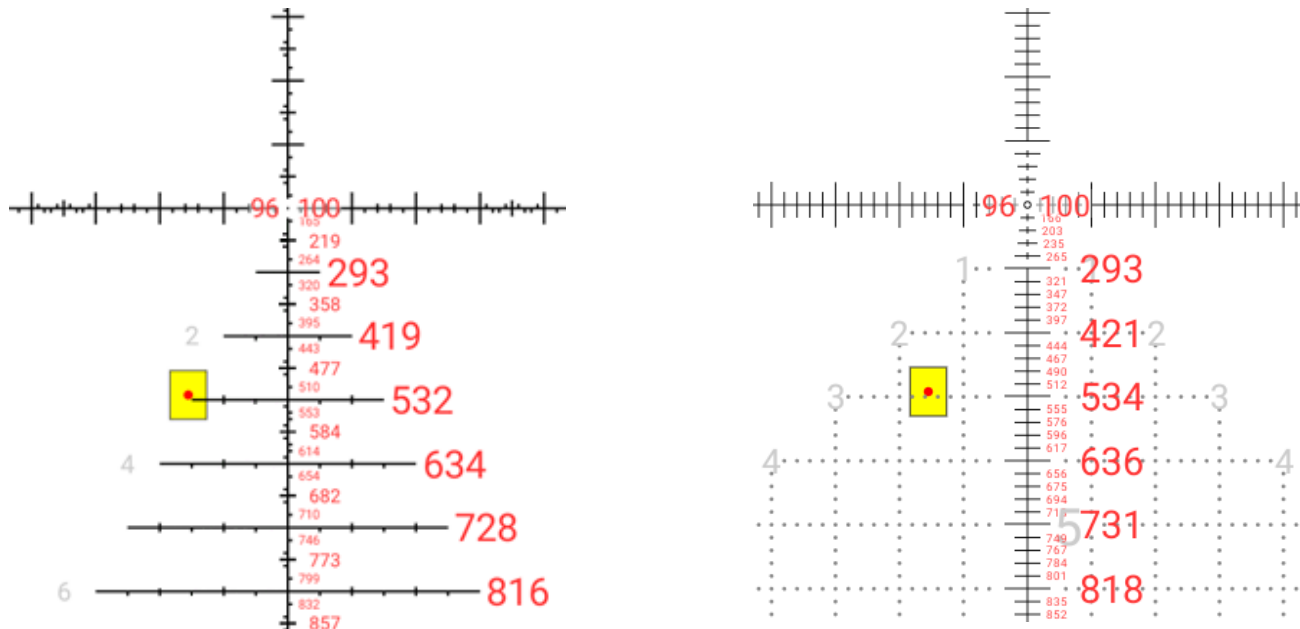


corrections in higher click values, we can really lose a lot of time for right positioning.

And here the AMR comes into play. No matter whether you put the target on the center of a square, on the left side or on the right side, the closed shape of the square is an intuitive guidance. The numbers on the outer edge of the Xmas tree pattern provide quick information on horizontal and vertical position in 1 Mil steps, helping you to quickly position the target in the right square.

Here is an example comparing SKMR4 with AMR reticle, illustrating the strength of the AMR.

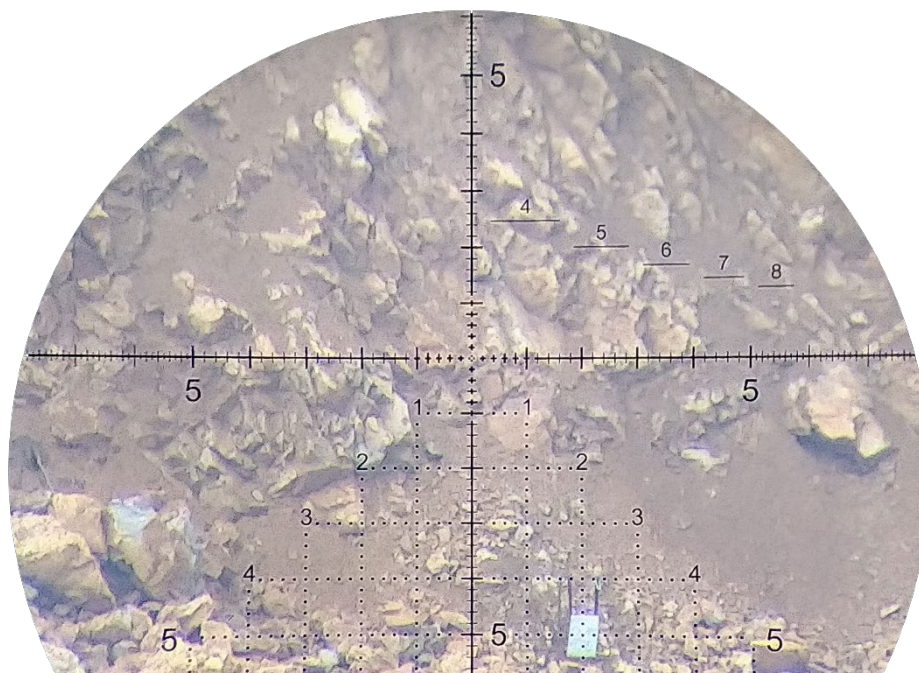
The SKMR4 maintains a simple and uncluttered reticle design over the entire field of view while the AMR offers a logical 1 Mil square system which gives the shooter fast orientation for elevation and windage corrections.



Graph 1
Target at 530m with 12x magnification, wind speed 9m/s, wind direction 91°: U2.9 MRAD, R1.5 MRAD,
Left side SKMR4 and right side AMR

Correction of shot

The correction of the shot is one of the most important things for long range shooters. The AMR mil square system with identical dot spacing for elevation and windage creates a simple net to locate the impacts/misses. If you miss the target, you will automatically remember the dot or square which covers the splash of sand, grass, soil, etc. For the second shot you simply move this dot or square to the center of the target. Of course, this works better with calibers like 338 Lapua Magnum as the impact is easier to see, than with smaller calibers like for example 6.5 Creedmoor.





Up to 1.000m with full 25x magnification

On almost every competition I'm asked for a new KAHLES scope with higher magnification. For static disciplines we have the K 1050 available with 50x magnification. But the K 525i is a tactical/sporty scope, developed to engage targets very precisely on different distances and under time pressure. With the K 525i, I personally shoot by reticle most of the time. Only for special targets or for precision shots I dial with turrets. Of course, I know all my clicks from 30 to 1.400m without cheat card or ballistic app, which is a must if you want to shoot by reticle. In my opinion, if you mainly shoot by reticle, the K 525i (5-25x) with the AMR reticle is just the perfect tool. Let me explain why.

Here are some examples using my Strelok ballistic calculator data.

Distance (m)	Elevation (clicks)	Windage (clicks)
375,0	U16,4	L0,0
400,0	U18,4	L0,0
425,0	U20,5	L0,0
450,0	U22,7	L0,0
475,0	U24,9	L0,0
500,0	U27,1	L0,0
525,0	U29,4	L0,0
550,0	U31,8	L0,0
575,0	U34,2	L0,0
600,0	U36,6	L0,0
625,0	U39,1	L0,0
650,0	U41,7	L0,0
675,0	U44,3	L0,0
700,0	U47,0	L0,0
725,0	U49,7	L0,0
750,0	U52,5	L0,0
775,0	U55,3	L0,0
800,0	U58,2	L0,0
825,0	U61,2	L0,0
850,0	U64,2	L0,0
875,0	U67,3	L0,0
900,0	U70,5	L0,0
925,0	U73,7	L0,0
950,0	U77,0	L0,0
975,0	U80,4	L0,0
1000,0	U83,8	L0,0

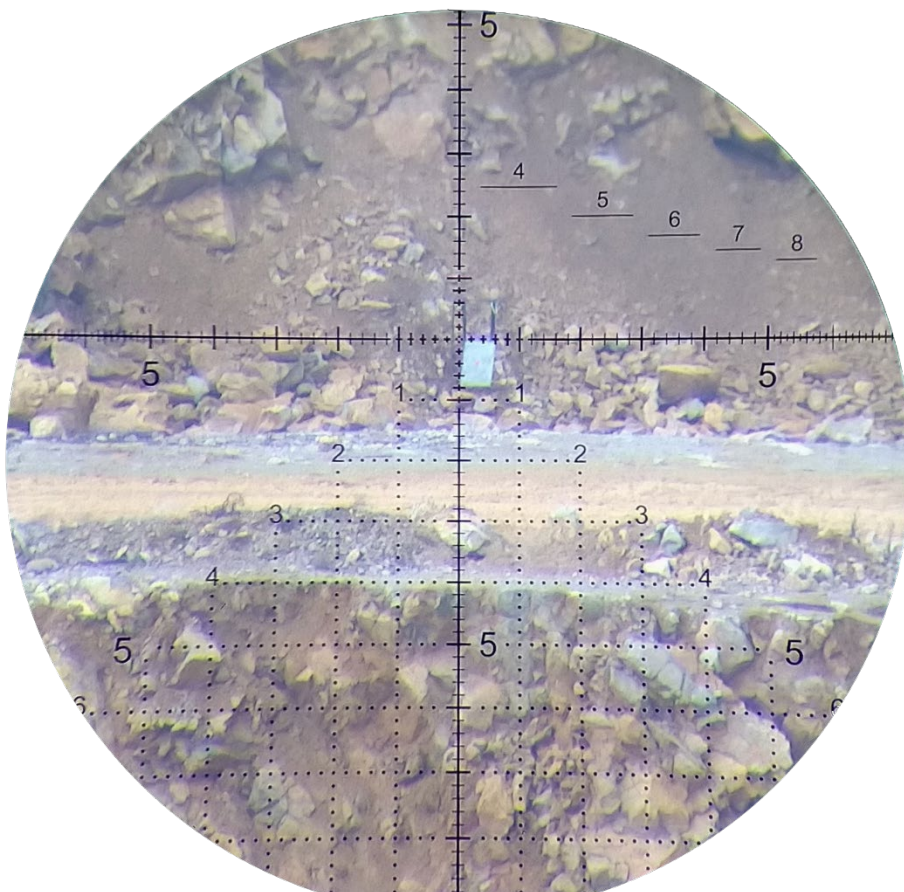
Graph 3
Ballistic chart from 375m to 1.000m
in 25m steps with elevation in clicks.

On the chart you can see that I need 84 clicks on 1.000m. That means, if I want to shoot on 1.000m only by reticle, I need to see at least 9 mils, so that, if my shot is below the target, I still can see the impact for later correction.

The center of the AMR reticle is 2 mils higher than the optical center. That's why I can see 9.2 mils even with full 25x magnification. This is enough for shooting on 1.000m. With other reticles which are centered on the optical center, I would have to lower the magnification to appr. 18 to see 9 or 10 mils.

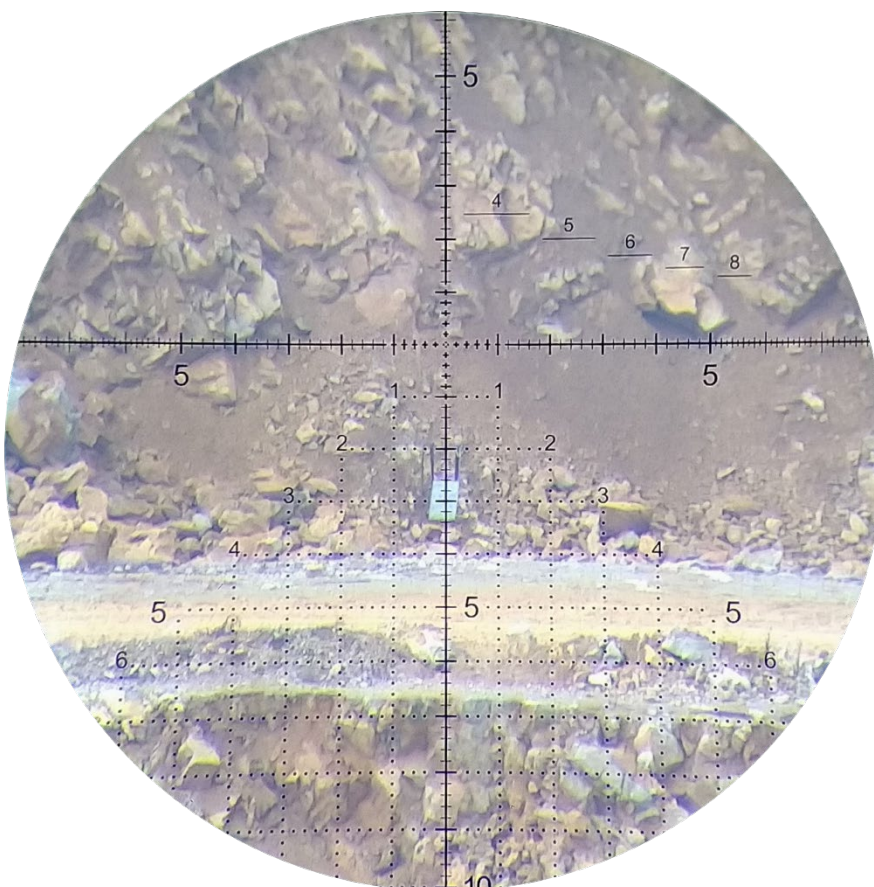
That means, two things:

1. Only with the AMR reticle you can use the full 25x magnification of the K 525i to shoot up to 1.000m by reticle only.
2. The higher the magnification, the shorter the distance you can cover with any reticle. With the K 525i AMR you can cover up to 1.000m with 25x magnification – a perfect combination for tactical shooting.

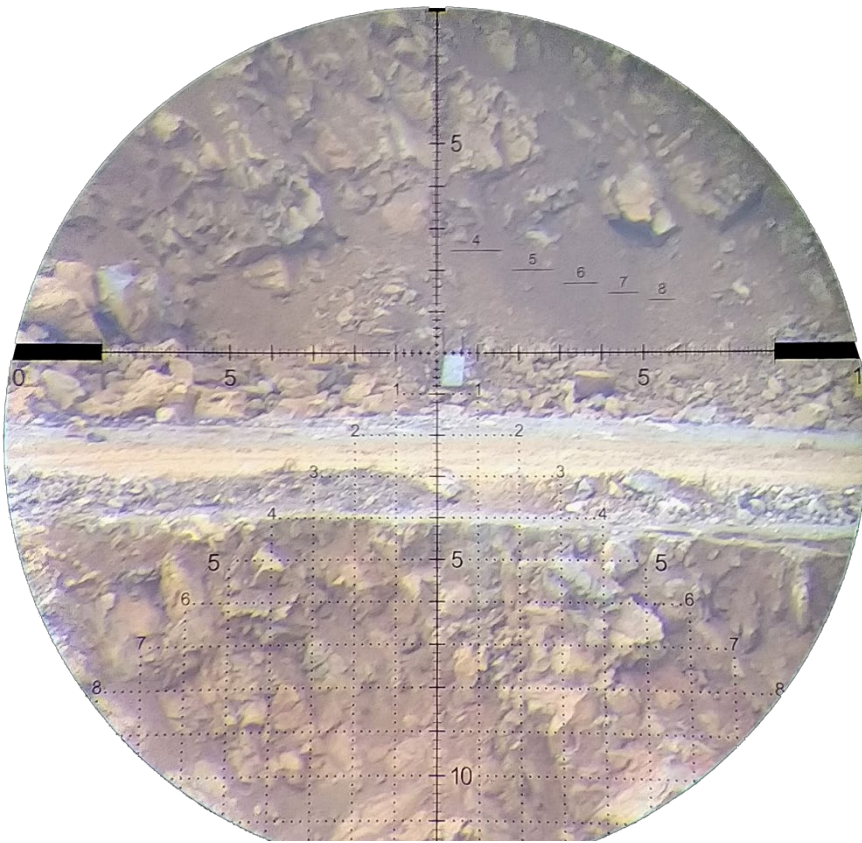


Graph 4
Target at 530m with 25x magnification

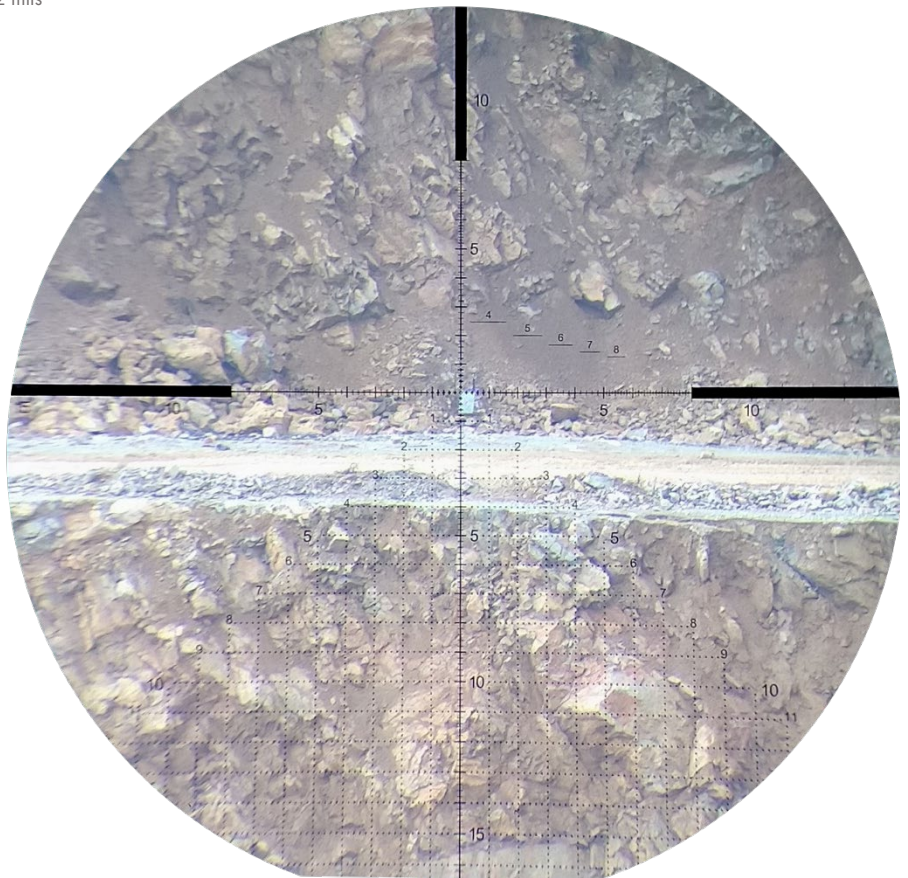
If, for various reasons, I want to be on the safe side, I turn the magnification on 23x and I easily see 10.2 mils.



Graph 5
Target 40x30cm at 530m with 23x magnification –
you can see 10.2 mils



Graph 6
Target 40x30cm at 530m with 18x magnification –
you can see 12 mils



Graph 7
Target 40x30cm at 530m with 12x magnification –
you can see 17 mils



Moving targets

A moving target on long distances is quite a challenge. Again, the AMR can provide some help. For a moving target with 2m/s on 600m my ballistic data shows 27 clicks windage and 37 clicks elevation. So, to follow the moving target is quite simple. I just put it in the square between 3-4 mils elevation and 2-3 mils windage. There are no shorter lines or longer lines to work with, only a square where you put in and follow your target.

90° shots

90 degrees shooting angle is a position which requires very good understanding of your equipment and trajectory. I will not go into details, as it depends on various factors like from the position of scope on the rifle, moa rails, height of the mount, etc. I just want to highlight the benefit of AMR reticle in 90 degrees position. No matter how you turn your AMR reticle, the basic view looks always the same, no need to think about adjustment! You always work with mil/mil squares! You do not have to think what different lines mean in different positions, it is the same square like in a normal position, with 0.2 mil dots. Simple and logical when you need to shoot fast in 90 degrees angle position.



Graph 8
90° rotated AMR reticle

KAHLES AMR Illumination

Illumination of the AMR reticle is a little bit different from other Christmas tree reticles. When we shoot in low light conditions or dark, we have no benefit of shooting by reticle, because we cannot see the impact/miss and cannot make corrections. We need to dial.

In low light or in dark we do not want to disturb our eyes with too much light, otherwise we might lose our target. Therefore, only the center of the AMR is illuminated. Illumination is as fine as possible, so even in total dark you still can use it for a shot.

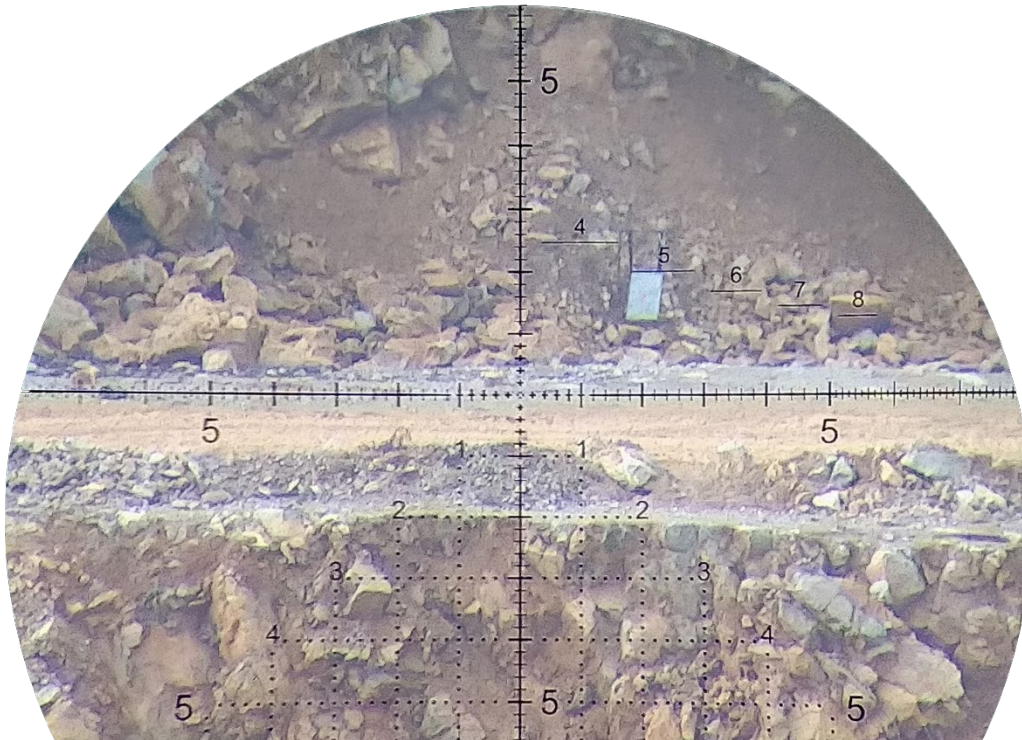


Graph 9
Illuminated AMR reticle

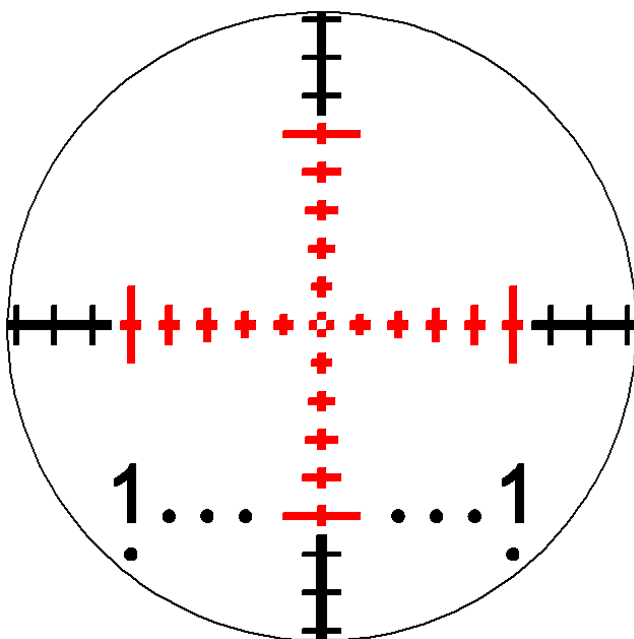


Quick distance check

The AMR reticle has a fast measurement system for estimating distances from 400-800m. In the upper right quadrant are 5 horizontal lines. The length of each line corresponds to half a meter at the indicated distance. If for example you have a 0.5m x 0.5m hardox plate and it fits exactly under the line number 6 in length, that means that the distance of the plate is 600m. If you have a target with 1-m height, and it fits exactly between the line number 5 and the main horizontal line, that means that the distance of the target is 500m. If you know your clicks, you just have to hold over and fire.



Graph 10
Target size 40cm x 30cm on 530m with 23x magnification



Graph 11
Center of the AMR reticle showing the small cross

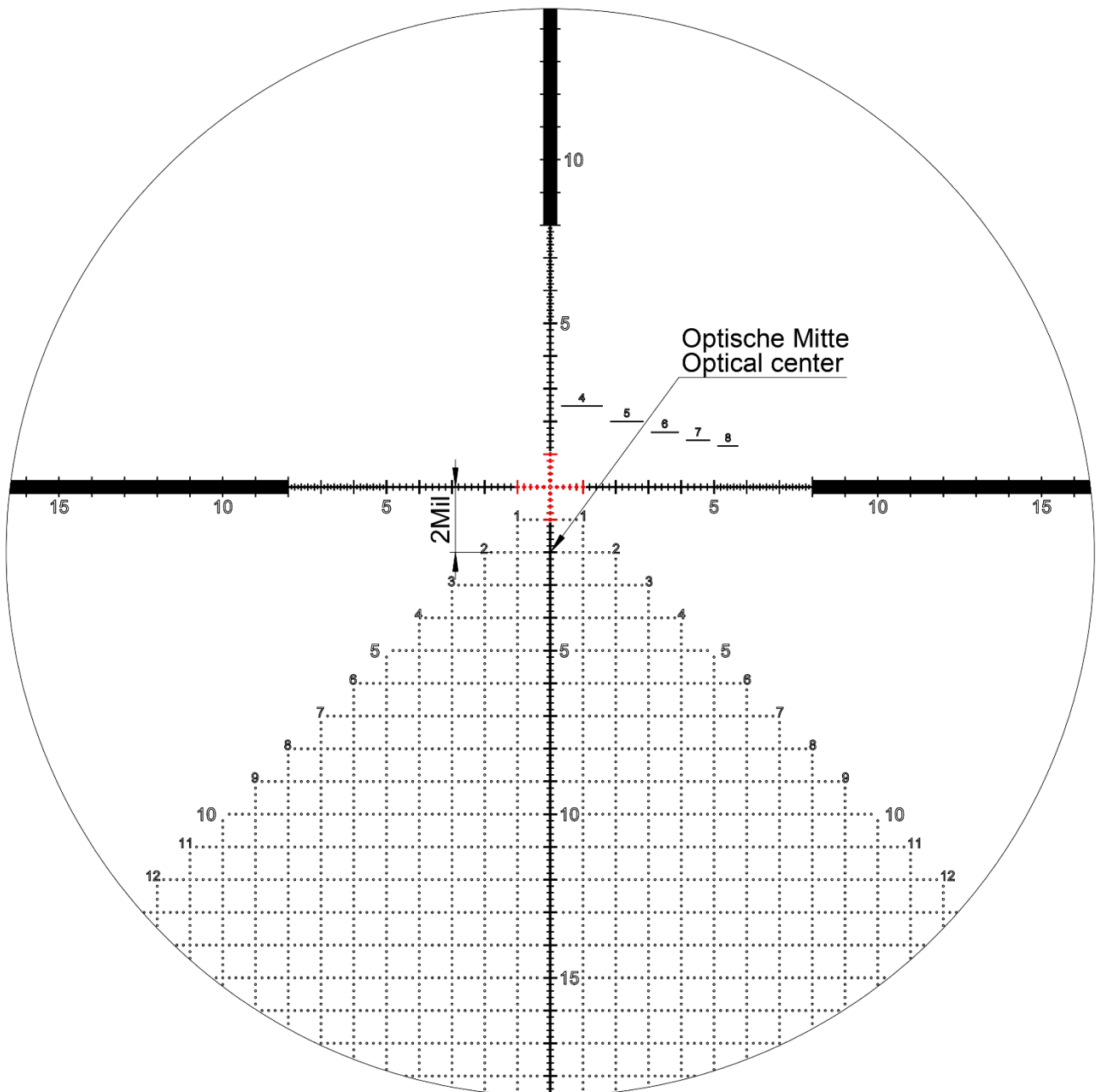
Open center cross

The center of the AMR reticle is a small cross, which has a hole inside with a diameter of 0,06 mils, which means 6 mm on 100m. I personally use this hole to check if a target is centered so I can see the reticle and the target at the same time. It is just like seeing through the reticle and feeling much more confident if nothing covers the target. Great for precision or trick shots.



RETICLE DIMENSIONS

K328i





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