

# ELEMENT®



## HELIX HD

2-16x50 SFP

OWNER'S MANUAL  
& RETICLE INFORMATION

# Index:

1)	Introduction – Meet the HELIX HD	1
2)	Mounting your Rifle Scope	2
	–Choosing Rings	
	–Alignment & Eye Relief	
3)	Rifle Scope Adjustments	4
	–Diopter: Focusing the Reticle	
	–Parallax Knob: Focusing the Target	
	–Adjusting Magnification	
	–Reticle Illumination	
	–Fitting/Removing Throw Lever	
4)	Zeroing your Rifle Scope	8
	–Adjusting the Turrets	
	–Boresighting	
	–Fine Tuning	
	–Slipping Turrets to Zero	
5)	Understanding Units: Milliradians	11
6)	RAPTR-1 Reticle	12
7)	Warranty Information & Spec Sheet	15

## MEET THE HELIX HD.

We've designed the HELIX in a way that puts the important things first: clear glass, smart reticle, innovative features and a turret system superior to other products in the same price class. The HD takes things one step further, with ED Glass, Reticle Illumination, a massive Zoom Range and more Elevation Travel. We've capped both the windage and elevation turrets for a more hunter-friendly, compact feel. Stringent quality control procedures give you peace of mind when taking that critical shot, and if something goes wrong, our Platinum Lifetime Warranty has you covered!



Your rifle system is only as good as its weakest point, and so mounting of a riflescope is a very critical process that requires time and precision. If you feel uncomfortable doing this yourself we suggest visiting a gunsmith, as incorrect mounting can cause many issues down the line.

## Choosing Rings

The HELIX HD requires 30mm rings. When purchasing rings for this riflescope, choose a quality product – inferior rings may not align correctly and can damage your scope.

Ensure that your rings are the correct height above the bore & action for safe clearance and a comfortable cheek weld.

We recommend using a 20 MOA base, or adjustable rings if shooting at extended ranges. **NEVER USE SCOPE SHIMS**, as these can cause damage to your body tube and void your warranty. **DO NOT** torque the rings down using more than **18 in-lbs (2 NM)** of force, as this can also cause damage to the body tube or affect internal components.



## Alignment & Eye Relief

- 1) When fitting the riflescope to your rifle, ensure that the rings are firmly attached to the rifle **BEFORE** you tighten the top screws down.
- 2) With the riflescope in place, torque the screws down until you begin to feel some resistance, but make sure you are still able to move the riflescope back and forth.
- 3) Get behind the rifle in a shooting position and move the riflescope forward or backward until the eye relief is best suited to your position.
- 4) With the eye relief set, use a set of bubble levels or a plumbline to ensure that the riflescope is level. A canted reticle will cause point of impact drift to the left or right, and affect accuracy.



- 5) Once you are happy with the position of your riflescope, begin to torque down your rings in a criss-cross pattern, moving between screws and turning small amounts at a time. Use a torque of 15–18 in-lbs. This will ensure that the riflescope does not shift position while tightening.

## Diopter – Focusing the Reticle

Everybody's eye is different, and the ocular lens will need to be adjusted for your eye in order for the reticle to appear in focus.

To do this, point the riflescope towards a blank or featureless background (i.e. a white wall or blue sky) and turn the ocular adjustment ring clockwise and counter-clockwise until the reticle appears in optimum focus.



**Tip:** Your eye will try to compensate for an out-of-focus reticle, so it may help to turn your parallax to minimum and look towards a far-off background. This will blur the background and allow your eye to focus on the reticle itself.

## Parallax Knob - Focusing the Target

A well-adjusted parallax is crucial for optimum precision, as it places the reticle in the exact same focal plane as the target and “fixes it in place”, eliminating the possibility of parallax error. And, of course, it allows you to see your target clearly.

To adjust parallax, rotate the parallax knob until your target is in focus. The parallax wheel is marked for different distances between 10m to infinity. These markings provide an indication of where your optimum parallax setting might be for a given distance, but will not always be 100% accurate as your ocular lens adjustment will affect the location of the focal plane. It is better to use your eye for such adjustments.



**Tip:** Place your riflescope in a fixed position and change the position of your eye (up/down, left/right) while adjusting parallax. If parallax is not set correctly, there will be apparent movement of the reticle in relation to the target. Adjust the parallax until this movement is eliminated.

### Adjusting Magnification

The HELIX HD features a magnification of 2-16x, and can be adjusted using the magnification ring near the rear of the riflescope.

The ring is marked with magnification powers from 2x up to 16x, and will line up precisely with the arrow on the ocular tube to indicate magnification.



This model is in Second Focal Plane, which means that the subtensions of the reticle will change with respect to the target as magnification is changed – The reticle is calibrated at 8x, and reticle subtensions will be correct at this setting.

### Illuminated Reticle

The HELIX HD features an illumination dial with different brightness settings and “off” positions between clicks. The Illuminated Centre Dot of the RAPTR-1 reticle will help you aim in difficult light conditions when the reticle is difficult to see.

The illumination system uses a **CR2032 battery**, which can be found at most hardware stores.

### Fitting/Removing the Throw Lever

Each HELIX riflescope comes standard with a throw lever that enables fast adjustment of the magnification ring. This can be removed simply by unscrewing and replacing with the included hex screw.



Your HELIX HD will need to be zeroed after it has been fitted to your rifle. The first step is to remove the turret caps to expose the turrets.

## 1) Remove the Turret Caps

The HELIX HD is fitted with turret caps that protect the turret mechanisms. Turn counterclockwise to remove.

## 2) Want to leave the turrets exposed?

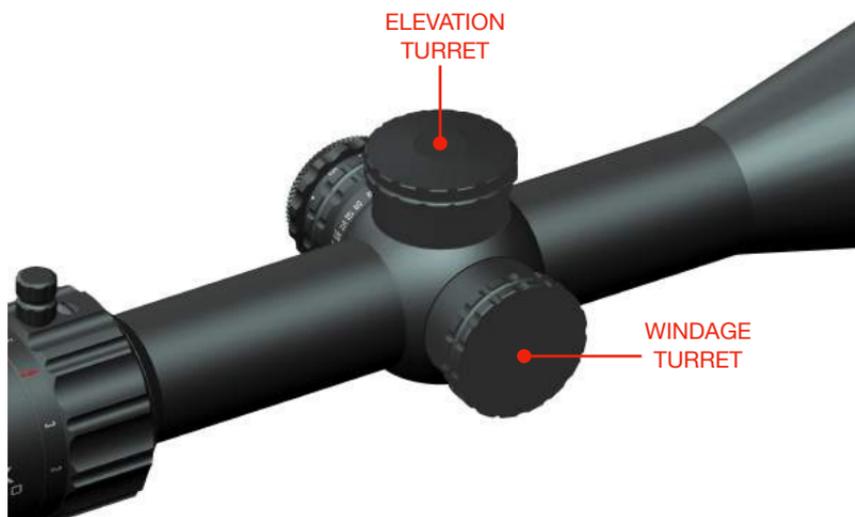
We've included thread protector rings for both the elevation and windage turrets, which will allow you to permanently remove the caps and access the turrets more easily if you wish.



## Adjusting the Turrets

Your HELIX HD has turrets that use Milliradians (or MRAD). This is an angular unit of measurement. For in-depth information on these different units, see the guide on page 12 - But to keep things simple, this is all you need to know when zeroing: At 100 Meters, one click will move your point of impact 1 Centimetre.

- To move your Point of Impact UP, turn ANTI-CLOCKWISE on your ELEVATION TURRET.
- To move your Point of Impact DOWN, turn CLOCKWISE on your ELEVATION TURRET.
- To move your Point of Impact RIGHT, turn ANTI-CLOCKWISE on your WINDAGE TURRET.
- To move your Point of Impact LEFT, turn CLOCKWISE on your WINDAGE TURRET.



### **Boresighting**

The HELIX HD is optically zeroed at the factory, so it should be close to centre when fitted. Even so, it is important to check that you are “on paper” to avoid frustration. Bore-sight your rifle to ensure that your reticle is roughly aligned before fine-tuning. If using an airgun or rimfire, shoot a large target at a close distance to check basic alignment.

### **Fine-Tuning your Zero**

You will need to fine-tune your zero after bore sighting, and this is done by putting shots on paper at a set distance. You can then assess the point of impact and adjust the turrets to shift your POI back to centre.

For example, if your POI is 10cm low and 5cm right, you will adjust your turrets 10 clicks UP and 5 clicks LEFT to shift your reticle position to match your POI.

We recommend taking a 3-shot group to confirm your zero before continuing to the next step. We also recommend a zero distance of 100yds/m for centerfire rifles, 50yds/m for rimfires and 20-50yds/m for airguns. If you cannot boresight your rifle, start at a closer distance to get on paper, and then move out further to make precise adjustments.

### Slipping your Turret back to Zero

Once zeroed, you will want to set your turret housings so that the "0" on your turrets line up with the indicator.

- 1) There is a locking screw on top of each turret holding the outer cap in place. Using the rim of a cartridge, a coin or a screwdriver, loosen this screw and lift the turret housing off.
- 2) Line up the "0" on the turret housing with the indicator line and push it down into position. The teeth on the turret housing will match up with the teeth on the turret rod.
- 3) With one hand holding the turret firmly in place, turn the locking screw clockwise to lock the turret housing in place.
- 4) The windage turret can be reset in the same way.
- 5) Replace protective turret caps.



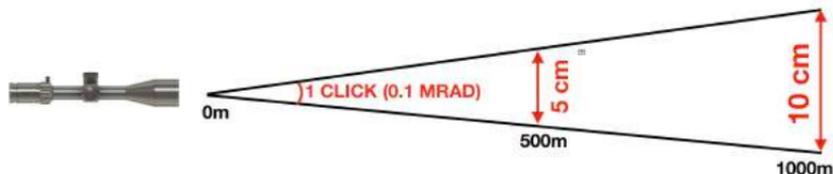
With your turrets set, you will now be able to use data from ballistics calculators and dial your turrets for long-range shooting instead of using reticle holdover!

While it is possible to use your rifle scope without understanding how these systems work, it is best to know the basic concepts, as they are an integral part of "Shooting Education", and will help you get the best out of your rifle scope.

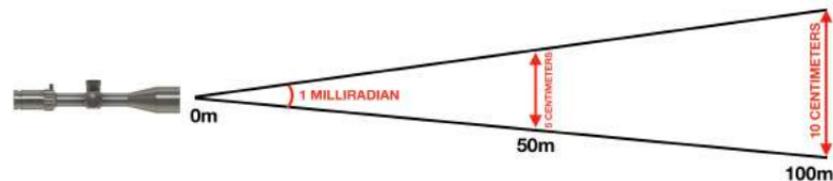
The two units we use in the shooting world are Milliradians (MRAD or MIL for short) and Minutes of Angle (MOA for short). The concept behind these two is very similar: They are angular units of measurement, meaning they can be used at any distance to quantify the distance between turret clicks and reticle markings. Since the Helix HD is only available in MRAD, we'll focus on these units.

Technically speaking, one MRAD = 1/1000 of a Radian. But that doesn't help us.

In simple terms, ONE MRAD = 10cm at 100m, or if you prefer Yards, 0.1 Yards at 100yds. This makes these two units very useful, because we can relate them to units of measurement we use every day.



Most rifle scope turrets are divided up into smaller units for more precise adjustments. The HELIX HD features 1/10 MRAD click adjustments, but we have engraved "1 Click = 1 cm @ 100m" to make things easier to understand!



The 2-16x50 HELIX HD features the new RAPTR-1 Reticle.

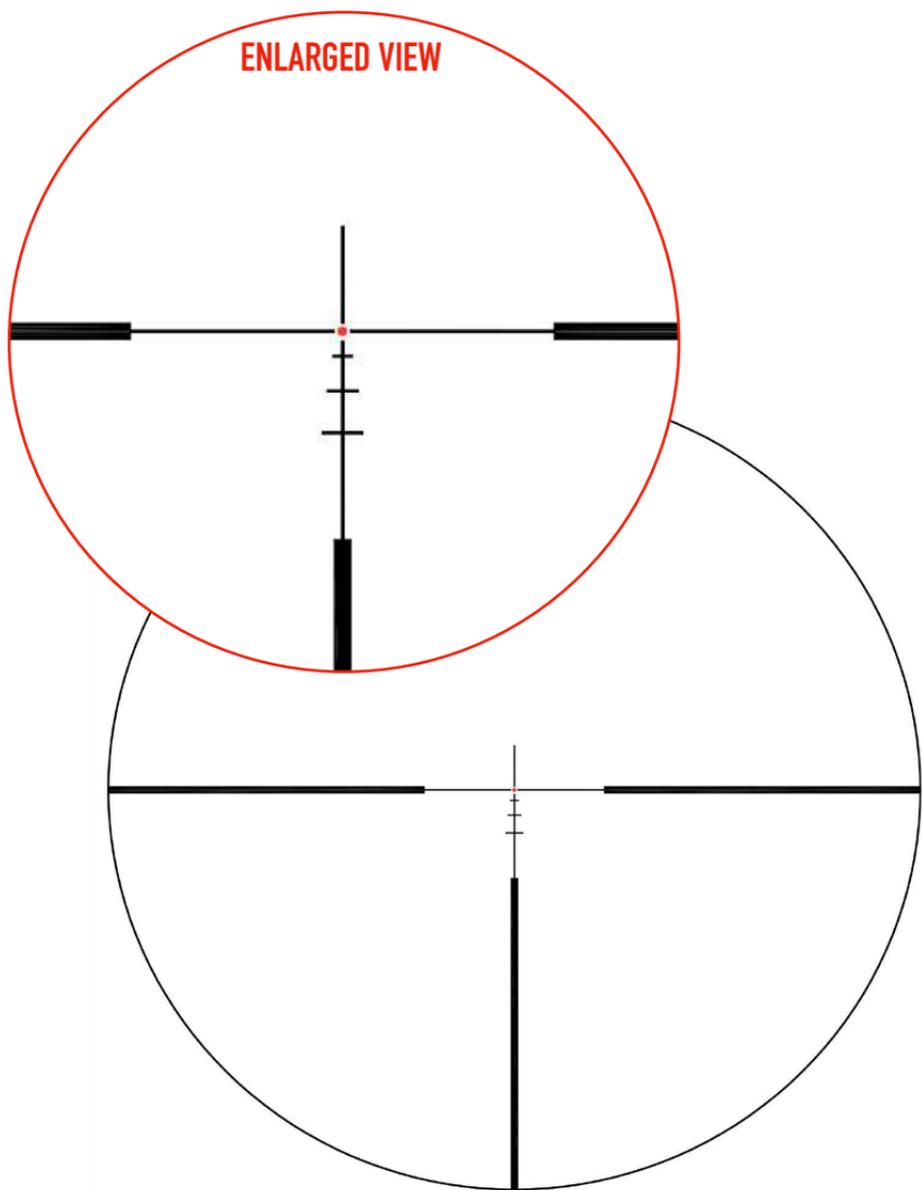
**RAPTR** stands for **RAPid TR**ajjectory, and is a BDC (Ballistic Drop Compensation) reticle, which means that the hold marks are designed to align with a bullet's trajectory instead of with a specific set of angular units.

With the HELIX HD being designed around the needs of hunters, we've designed the RAPTR-1 to be as simple and uncluttered as possible while providing hold data for Centrefire hunting cartridges that we expect most shooters to use.

If you don't plan to shoot much further than your zero distance, then you can simply ignore the hold points and use the centre dot. However, if you do plan to use the hold markings, then there are a few things you should know:

- 1) Every hunting rifle/cartridge combination has a slightly different trajectory. Things like scope height, barrel length, muzzle velocity and even the weather can change the way the bullet drops, and therefore it is impossible to create a BDC reticle that perfectly matches the trajectory of every rifle. However, you should be able to get it pretty darn close using the method in point 2:
- 2) Since this is a second focal plane riflescope, the reticle markings will shift with relation to the target as you zoom in or out. This can work to your benefit, as it can allow you to **CALIBRATE** your BDC reticle for your specific rifle. Zooming **IN** will align the hold points better with a flat-shooting rifle like a 7mm Rem Mag or .270 Win, while zooming **OUT** will stretch the hold points further in relation to the target and allow better alignment for slower-shooting cartridges like a .308 Win.
- 3) If you are set on using a specific magnification and don't care for the calibration method, You can work out the distance that corresponds with each hold point and draw up your own drop card. We have included stickers for your convenience, which can be placed inside your scope cap or in your ammo box.
- 4) The **WIDTH** of the BDC Hashes correspond with a 5mph crosswind. Once again, this may not be exact for your cartridge every bullet is affected differently by wind, but these markings can be used as a baseline for your estimations.

FOR EXACT SUBTENSIONS, SEE RAPTR-1 RETICLE SHEET

**ENLARGED VIEW**

The RAPTR-1 Hold Marks are designed to correspond at **8x** with the drop data for a **.308 Winchester** shooting a 168gr Bullet at 2600fps, at sea level. Of course, this is rather specific, but this is the calibration standard from which other calibres can be worked out from. For example, a **6.5 Creedmoor** shooting a 143gr Bullet at 2700fps has a trajectory that matches the hold marks perfectly at **10x** Magnification.

**.308 Win | 168gr Spitzer | MV 2600fps | Temp 20c | Alt. 100m**

<b>Distance (m)</b>	200	300	400
<b>Drop (MRAD)</b>	0.7	1.7	2.8
<b>Drop (BDC @ 8x)</b>	1st Hash	2nd Hash	3rd Hash

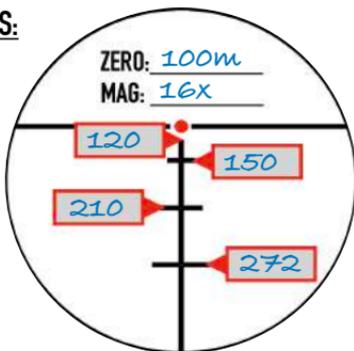
## CALIBRATING THE RETICLE FOR YOUR RIFLE:

You can calibrate your reticle using the following steps:

- 1) Ensure that the reticle is zeroed at 100 Meters or Yards.
- 2) Place a target at 200 meters/yards and take a shot.
- 3) Place the centre dot on your aim point and adjust magnification until the 200 mark lines up with your point of impact.
- 4) Repeat this step for 300 and 400yds.

## USING THE INCLUDED 'CHEAT SHEET' STICKERS:

We've included stickers to help you record your drop data. If, for example, you wanted to shoot the same .308 Winchester used as an example above at 16x, the hash marks would no longer line up with easily-remembered distances. Writing them down and placing the sticker somewhere visible (like inside your scope cap or inside an ammo box) is recommended.



As shooters, we know that there is nothing worse than being let down by your equipment. We have made every effort to build a rugged, reliable product that will not break under any normal circumstances, and have implemented some of the strictest quality control measures in the industry. However, we know that things can go wrong, and therefore ALL ELEMENT Riflescopes are covered by our PLATINUM LIFETIME WARRANTY. This includes lifetime cover for any riflescopes damaged through normal use, and requires no registration, proof of purchase or transfer. If you have a problem, we will fix it - It's that easy!

For any warranty claims, please contact [support@element-optics.com](mailto:support@element-optics.com) or complete a claim form on our website.



The Element Optics PLATINUM LIFETIME WARRANTY applies to riflescopes only, and does not cover accessories. Theft, loss, deliberate damage and cosmetic damage that does not hinder the operation of the riflescope is not covered. If your product can not be repaired and a replacement model is no longer in production, a model of equal value will be substituted. For more details, visit [www.element-optics.com/warranty](http://www.element-optics.com/warranty)

# SPEC SHEET

MAGNIFICATION RANGE	2-16x	
TUBE DIAMETER	30mm	
OBJECTIVE LENS DIAMETER	50mm	
EXIT PUPIL	8.5-3.1mm	
EYE RELIEF	101.6mm (4")	
FIELD OF VIEW	@100yds: 60.4-7.5ft	@100m: 20.2-2.51m
CLICK VALUE	1/4 MOA (15 MOA / REV)	1/10 MRAD (6 MRAD / REV)
ELEVATION ADJUSTMENT RANGE	100 MOA	29 MRAD
WINDAGE ADJUSTMENT RANGE	45 MOA	13 MRAD
MINIMUM PARALLAX	10 YDS	10 METERS
LENGTH	13.39"	340mm
WEIGHT	25.6oz	728g



@WeAreElementOptics



Element Optics



element\_optics



[www.element-optics.com](http://www.element-optics.com)