

If your Nikon riflescope requires service, please send it directly to the following address.  
 Nikon Scope Service  
 841 Apollo Street, Suite 100  
 El Segundo, CA 90245-4721  
 1-800-NIKONSV (1-800-645-6678)



# M-223 Laser IRT 2.5-10x40



## NIKON VISION CO., LTD.

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Congratulations on your choice of a Nikon Laser Rangefinding Riflescope. Your new riflescope is the finest example of Nikon's rugged and durable construction and precision bright optics; important qualities for a serious shooter's riflescope.

Whether you use your riflescope for hunting or for target shooting, the procedure for mounting is identical. After mounting the riflescope on your rifle, follow the procedures for reticle alignment.

When setting the reticle for hunting, you should determine your standard range and then adjust the reticle based upon that reading distance. For targets which vary from that standard distance you may simply adjust the position of the reticle in relation to your target, or you may wish to use the procedure for trajectory compensation.

You can also go to [www.nikonhunting.com/spoton](http://www.nikonhunting.com/spoton) to compare, graph and enhance your reticle settings. It's up to your personal preference. We hope that you will enjoy your new riflescope for many years to come. Enjoy using it, and above all, always follow safe shooting procedures!

Please observe the following guidelines strictly so you can use the equipment properly and avoid potentially hazardous problems. Before using this product, read thoroughly the "SAFETY PRECAUTIONS" and instructions on correct usage accompanying the product. Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. Keep this manual within reach for easy reference.

• Specifications and design are subject to change without notice.  
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N.B. Export of the products\* in this manual may be controlled under the laws and relatives of the exporting country. Appropriate export procedure, such as obtaining of export license, shall be required in case of export.  
 \* Products: Hardware and its technical information (including software)

### Key Features

- Measuring range: 32 yards-735 yards
- Distance measurement display: 1 yard
- Easy-to-aim 2.5x-10x optical observation system
- Waterproof design (NOT designed for underwater usage)
- Compact, ergonomic design
- Automatic shut-off (after approx. 30 seconds of no use)
- Defaults to last settings used
- 12-second continuous measuring function
- Diopter adjustment function

### The following factors ensure best range and accuracy:

- Nighttime use
- Cloudy weather
- Bright-colored targets
- Targets with highly reflective surfaces
- Targets with shiny exteriors
- Large targets
- Shooting targets facing at 90 degrees

### Measurements may be inaccurate or not possible in the following cases:

- Slender or small target
- Target has diffusing reflective surface
- Target does not reflect the laser beam (glass, a mirror, etc.)
- Black target
- Target has pronounced depth
- Using in snow, rain or fog
- Target is measured through glass
- Reflective surface measured from diagonal direction
- Moving target
- Obstacle moving in front of the target
- When targeting the surface of water

## SAFETY PRECAUTIONS

### CAUTIONS BEFORE USE

Please observe the following guidelines strictly so you can use the equipment properly and avoid potentially hazardous problems. Before using this product, read thoroughly the "SAFETY AND OPERATION PRECAUTIONS" and instructions on correct usage accompanying the product. Keep this manual within reach for easy reference.

#### WARNING

This indication alerts you to the fact that any improper use ignoring the contents described herein can result in potential death or serious injury.

#### CAUTION

This indication alerts you to the fact that any improper use ignoring the contents described herein can result in potential injury or material loss.

### SAFETY AND OPERATION PRECAUTIONS

#### Warning

- Never look directly at the laser beam or directly at the sun when using the riflescope. It will permanently damage your eye.
- Do not aim at the eye.
- Do not press the POWER button while looking into the optics from the objective side.
- Do not operate the riflescope with additional optical elements, such as lenses or binoculars. Using an optical instrument together with the riflescope increases the danger of damaging the eyes.
- Do not disassemble the riflescope. A product that has been disassembled is not guaranteed by the manufacturer.
- If the body of the riflescope is damaged, or if it emits a strange sound due to dropping or some other cause, immediately remove the battery and stop using.

#### Cautions

- Do not press the POWER button when you are not using the riflescope.
- Do not leave the riflescope within the reach of small children.
- Rain, water, sand or mud should be removed from the body of the riflescope as soon as possible, using a soft, clean, dry cloth.
- Although the riflescope is waterproof, it is not designed for use underwater.
- Do not leave the riflescope in an unstable place, as it may fall and cause injury, or become damaged.
- Do not look through the riflescope while walking. You may walk into something and get hurt.
- Do not leave the riflescope in a car on a hot or sunny day, or near heat-generating equipment. This may damage or negatively affect it.
- Do not leave the riflescope in direct sunlight. Ultraviolet rays and excessive heat may negatively affect or even damage the unit.
- When the riflescope is exposed to sudden changes in temperature, water condensation may form on lens surfaces. Do not use the product until the condensation has evaporated.
- Do not clean the body of the riflescope with alcohol.
- Do not leave the polyethylene bag used for packaging within the reach of small children.

### CAUTIONS BEFORE USE

This product has removable parts. Make sure children do not swallow these parts. Consult a doctor if any part of this product is swallowed.  
 • If your riflescope should fail to operate correctly, discontinue use immediately and consult the troubleshooting section in this manual.  
 If you are unable to correct the problem, contact Nikon Scope Service.

### CARE AND MAINTENANCE

The riflescope is effectively sealed against moisture and dust. You may use the riflescope safely either in the rain or in dusty climates. To preserve the appearance of the riflescope, we suggest that it be dried and cleaned prior to storage. Use a soft cloth for cleaning metal surfaces and use photographic lens tissue to clean the riflescope's lenses.

#### Lenses

- Take care not to scratch the lenses. When removing dust from a lens, use a soft oil-free brush.
- When removing smudges or fingerprints from a lens, wipe the lens gently using a lens cleaning paper or a soft cloth dampened with pure alcohol. Never wipe a lens with abrasive cloths or facial tissues or with a cloth that has been used to wipe the main body.
- Do not wipe a lens using a leather handkerchief as it is likely to damage the lens surface.

#### Main body

- Clean the main body of the riflescope with a soft cloth. Do not use benzene, thinner, or other agents to the body of the riflescope as they may cause discoloration or rubber degeneration. It is not necessary to oil the surface of the riflescope.
- Do not lubricate the windage and elevation knobs, eyepiece adjuster, and power selector ring. There is no need to lubricate these parts.

#### Storage

High humidity may cause condensation or mold to form on the lens surface. To prevent this from occurring, store the riflescope in a cool, dry place. After use on a rainy day or at night, thoroughly dry the riflescope at room temperature and then store it in a cool, dry place.

### NOTES ON LITHIUM BATTERY

If handled incorrectly, the battery may rupture and leak, corroding equipment and staining clothing. Be sure to observe the following:

- Install battery with the + and - poles positioned correctly.
- The battery should be removed when exhausted or during extended periods of non-use.
- Use only a CR2 lithium battery.
- If battery fluid contacts eyes or skin, rinse well with water. If swallowed, consult a doctor immediately.
- Do not short-circuit battery chamber terminals.
- Do not carry batteries together with keys or coins in a pocket or bag. This may overheat and short-circuit the batteries.
- Do not put batteries in fire or water. Never disassemble batteries.
- Do not charge the battery.
- Do not subject stored batteries to extremes in temperature.
- Do not subject batteries to strong vibrations or shock.

## INSTRUCTION MANUAL



### Nomenclature



- 1 Objective lens
- 2 Eyepiece lens
- 3 Elevation adjustment knob
- 4 Windage adjustment knob
- 5 Eyepiece adjustment ring
- 6 Power index dot
- 7 Power scale
- 8 Power selector ring
- 9 POWER button
- 10 Battery chamber cap
- 11 Product number
- 12 Explanatory label
- 13 Mount base

#### CAUTION

Make sure that the riflescope is securely mounted on the rifle. Do not use excessive force when tightening the nuts and screws, otherwise parts may be damaged.

#### Included Items

Body	1 pc.
Eyepiece cap	1 pair
Objective cap	1 pair
Battery (CR2)	1 pc.
Mount base (with wrench)	1 set
Nikon cloth	1 pc.

### Instructions for Mounting the Riflescope

We highly recommend having a competent gunsmith mount your new M-223 Laser IRT. Should you decide to mount the riflescope yourself, we highly recommend you use a torque wrench.

Slide the mount into the rail slot opening at the bottom of the riflescope. Be sure to slide the mount as far forward into the slot as possible.

Tighten the screws to the torque setting noted below.

Attach the riflescope and mount to the Picatinny rail of the rifle, and be sure to adjust the position of the riflescope and mount to provide the proper eye relief while clearing the charging handle of the rifle. Be sure that cross bolt of the mount fits properly into the recess of the Picatinny rail. Tighten to the torque setting noted below.

#### Torque Settings:

- Mount base to riflescope - 50 in-lb, 3 mm hex screw
- Mount base to rifle - 35 in-lb, 8 mm nut

## Internal Display

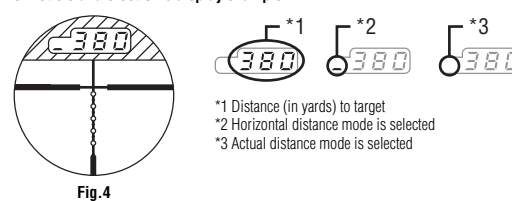
### 1. Reticle (Fig. 4)

Use the reticle to aim at the target. The reticle can be seen through the eyepiece even when the riflescope is turned off.

### 2. [888]- Electronic display

Indicates the current distance display mode, status, and the distance (in yards) to the target.

### 3. Reticle and electronic display example:



- \*1 Distance (in yards) to target
- \*2 Horizontal distance mode is selected
- \*3 Actual distance mode is selected

- H - Riflescope switched to horizontal distance mode\* (the riflescope displays the horizontal distance to the target; initial setting)
- R - Riflescope switched to actual distance mode\* (the riflescope displays the line-of-sight distance to the target)
- E - Now measuring
- - - - Could not be measured
- L - Battery should be replaced soon

\*See "Operation Summary" for more information

## Replacing the Battery

### Battery type

CR2 lithium battery (3 V)

### Replacing the battery

1. Loosen the battery chamber cap. (Fig. 5)
2. Replace the battery. Make sure the + and - poles are inserted as shown. (Fig. 6) Use only a CR2 lithium battery.
3. Tighten the battery chamber cap.

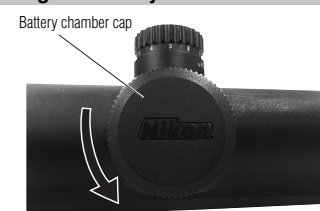


Fig. 5



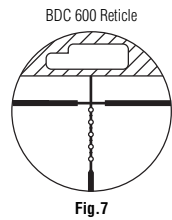
Fig. 6

## Operation Summary

### Preparation

#### 1. Adjust the diopter.

- 1.1 Look through the eyepiece with your eye positioned about 3.5 inches (9 cm) away from the eyepiece lens. You will see the BDC reticle (Fig. 7). Be sure your eye is positioned within the proper alignment and eye relief, otherwise the view will "black out."
- 1.2 Point the objective end of the riflescope at the sky (do not point at the sun) or at a plain, unpatterned wall.
- 1.3 Turn the eyepiece adjustment ring counter-clockwise and then turn it clockwise until the reticle appears sharp.



#### 2. Adjust the magnification.

- The Laser Rangefinding Riflescope has a variable magnification from 2.5x to 10x. To adjust the magnification, rotate the power selector ring until the desired magnification appears adjacent to the power index dot (Fig. 1).

#### 3. Adjust for elevation and windage.

While looking through the riflescope, align the rifle with your aiming point on the target and shoot a trial round. If the bullet does not hit the aiming point, adjust the elevation and windage as follows:

- Turn the elevation and windage adjustment knobs to correct for elevation and windage. If the bullet hits under the aiming point, turn the elevation adjustment knob in the direction of the arrow marked "U." If the bullet hits to the left of the aiming point, turn the windage adjustment knob in the direction of the arrow marked "R."

#### Note:

- The elevation and windage adjustment knobs are calibrated in divisions of 1/4 minute of angle with a click at intervals of 1/4 minute of angle (quarter division).
- When adjusting the reticle to the point of aim, remember that one minute of angle equals approximately one inch (2.54 cm) at 100 yards (91.44 m). Therefore, if the impact point is two inches (5.08 cm) low and one inch (2.54 cm) right at 100 yards (91.44 m), you should adjust two minutes of angle up one minute of angle left.

#### 4. Set the elevation and windage adjustment knobs to zero.

After the reticle has been adjusted to the point of impact, pull out the adjustment knobs. The adjustment knobs can now be turned freely. Align the zero number to the index line, and then push the knobs back in to set the current position to zero.

### Measuring the Distance to the Target

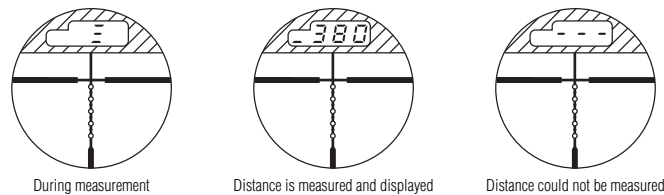
**Caution: the use of controls and adjustments and the performance of procedures other than those specified herein may result in exposure to hazardous radiation.**

#### 1. Press the POWER button.

The electronic display can be seen through the eyepiece. The riflescope begins measuring the distance to the target and will continue to measure the distance for 12 seconds.

#### 2. Aim at the target.

12 seconds after the riflescope begins measuring the distance, the electronic display starts blinking. Press the POWER button to measure the distance to the target again.



#### Note:

- Once the POWER button is pressed, the riflescope turns off after 30 seconds unless the POWER button is pressed again.

### Changing the Distance Display Mode

You can switch between horizontal distance mode (the riflescope displays the horizontal distance to the target; initial setting) and actual distance mode (the riflescope displays the line-of-sight distance to the target).

#### 1. Press the POWER button.

The electronic display can be seen through the eyepiece.

#### 2. Wait for 12 seconds.

12 seconds after you pressed the POWER button, the electronic display starts blinking.

#### 3. Press and hold the POWER button for about 10 seconds while the display is blinking.

- The current mode is displayed (—H—) for horizontal distance mode, (—R—) for actual distance mode).

#### 4. Press the POWER button to switch modes.

- The current mode is displayed.

#### 5. Wait for 3 seconds.

- 3 seconds after you pressed the POWER button, (—H—) is displayed and the new setting is saved. The riflescope turns off after 30 seconds unless the POWER button is pressed again.

## Troubleshooting/Repair

If you experience any problems with your riflescope, refer to the troubleshooting information below. If your riflescope needs to be repaired, contact Nikon Scope Service.

Symptom	Possible Solutions
Riflescope does not turn on, electronic display does not turn on	<ul style="list-style-type: none"> <li>• Press the POWER button.</li> <li>• Check and replace the battery if necessary.</li> </ul>
Target distance cannot be obtained	<ul style="list-style-type: none"> <li>• Make sure that the objective lens is not blocked by an object, your hand, fingers, etc.</li> <li>• Make sure that the objective lens is clean.</li> <li>• Confirm the list of ideal conditions and targets noted in this document.</li> <li>• Check and replace the battery if necessary.</li> </ul>
[---] ("Cannot measure") appears	<ul style="list-style-type: none"> <li>• Be sure to hold the rifle steady while measuring the distance.</li> <li>• Be sure the target is within measuring range (32-735 yards)</li> </ul>
Close-range targets cannot be measured	<ul style="list-style-type: none"> <li>• Be sure that nothing, such as leaves or grass, is between the riflescope and the target.</li> </ul>
Targets beyond a certain distance cannot be measured	<ul style="list-style-type: none"> <li>• Be sure that nothing, such as leaves or grass, is between the riflescope and the target.</li> </ul>
Measurement result is unstable	<ul style="list-style-type: none"> <li>• Check and replace the battery if necessary.</li> <li>• Be sure that the target shape and condition are appropriate to reflect the laser beam.</li> <li>• Be sure to hold the riflescope steady while measuring the distance.</li> <li>• Be sure that nothing, such as leaves or grass, is between the riflescope and the target.</li> </ul>
Incorrect result is displayed	<ul style="list-style-type: none"> <li>• Check and replace the battery if necessary.</li> <li>• Be sure that the target shape and condition are appropriate to reflect the laser beam.</li> <li>• Be sure that nothing, such as leaves or grass, is between the riflescope and the target.</li> </ul>

Never let anyone other than an authorized representative of the manufacturer inspect or repair your riflescope. Failure to follow this instruction could result in injury, or damage to the product.

## Specifications

Model	M-223 Laser IRT 2.5-10x40	
<b>Riflescope</b>		
Actual magnification	2.5x-10x	
Effective objective diameter	(mm) (in)	40 1.57
Exit pupil	(mm) (in)	4.0★ 0.16★
Eye relief *	(mm) (in)	89-89 3.5-3.5
Objective outside diameter	(mm) (in)	52 2.05
Eye-piece outside diameter	(mm) (in)	43 1.69
Adjustment graduation (1 click) **	1/4 moa 1/4 inch at 100 yards	
Maximum internal adjustment ** (elevation and windage)	(moa)	60
Parallax setting	(yards)	100
Field of view at 100 yards*	(ft)	34.5-9.2
Length x Height x Width	(mm) (in)	310 x 74 x 80 12.2 x 2.9 x 3.1
Weight (without battery)	(g) (oz)	610 21.5
<b>Rangefinder</b>		
Measuring range	(yards)	32-735
Distance display	1 yard step	
Operation temperature	(°C) (°F)	-10° to 50° 14° to 122°
Wavelength	(nm)	905
Pulse duration	(ns)	30
Output	(W)	15
Safety	IEC/EN 60825-1:2007 Class 1 Laser Product, FDA Class 1 Laser Product	
EMC	FCC Part15 SubPart B Class B CE EN61000-6-3:2007, EN61000-6-1:2007 C-tick AS/NZS61000-6-3:2007	
Environment	WEEE, RoHS	
Power source	CR-2 lithium battery x1 (DC 3V)	
Water resistance	Main body: Waterproof up to 3 ft. 3 in. (1 meter) for up to 10 minutes Battery chamber: Water resistant***	

★ When maximum magnification (10x) is selected.

\* (at minimum magnification) - (at maximum magnification)

\*\* moa = minute of angle

\*\*\* The battery chamber is water resistant, not waterproof. Water may enter the device if the riflescope is submerged in water. If water enters the battery chamber, wipe out any moisture and allow time for the chamber to dry.

#### Waterproof models:

The M-223 Laser IRT Laser Rangefinding Riflescope is waterproof, and will suffer no damage to the optical system if submerged or dropped in water to a maximum depth of 3 ft. 3 in. (1 meter) for up to 10 minutes.

#### The M-223 Laser IRT offers following advantages:

- Can be used in conditions of high humidity, dust and rain without risk of damage.
- Nitrogen-filled design makes it resistant to condensation and mold.

#### Observe the following when using the M-223 Laser IRT:

- As the unit does not have a perfectly sealed structure, it should not be operated nor held in running water.
- Any moisture should be wiped off before adjusting movable parts (power selector ring, eyepiece, etc.) of the riflescope to prevent damage and for safety reasons.
- To keep your riflescope in excellent condition, Nikon Vision recommends regular servicing by an authorized dealer.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules and to EU EMC directive. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

Do not use this product for purposes beyond the limits of its stated accuracy.