



Leatherwood



MM-2 TACTICAL **RED DOT** SIGHT INSTRUCTIONAL MANUAL

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CONGRATULATIONS! You have just purchased the MM-2 Tactical **red dot**, one of the toughest electronic sights built today, featuring rugged machined aluminum housing. The MM-2 **red dot** comes in your choice of lower 1/3 co-witness or absolute co-witness riser mount. It can be quickly mounted to any Weaver one-piece base or MIL-STD 1913 Picatinny rail. The torx (star) head crossbolt and clamp ensures that this sight stays solidly mounted until the shooter is ready to remove it.

Drawing upon the considerable advances of reflex sight technology, the 1x MM-2 **red dot** sight delivers outstanding precision and performance. Thanks to our **b-Dot** LED technology, the MM-2 **red dot** is much brighter than conventional dot sights even under sunny daylight conditions. Furthermore, under normal use, a single battery powers this sight upwards of 55,000 hours (6.2 years). The MM-2 just might be the most reliable electronic device you will ever own!

The MM-2 can be mounted onto any firearm from handguns and rifles to muzzleloaders and

shotguns. Satisfying the needs of all shooters from the recreational hunter to law enforcement, the MM-2 is a versatile optic, suitable for recreational shooting, sport shooting and tactical operations.

Measuring 2.5 inches long by 1.4 inches wide by 1.4 inches tall, the MM-2 is extremely compact and comes with flip-up lens covers and kill flash filter. Not including the flip-up lens covers, the MM-2 weighs only 3.8 ounces. The full package is just right for most shooting and hunting needs.

Inside the high-strength extruded aluminum housing of the MM-2 is the most advanced electronic reflex red-dot sight technology now possible. In order to protect the solidly mounted circuitry, the sight is fully waterproof. Like all Hi-Lux rifle optics, this sight has been built for use in the real world and can handle anything that Mother Nature can dish out.

The advanced efficiency of the **MM-2** circuitry not only ensures much longer battery life, but also produces a much brighter dot than previously

available. The 12-setting digital switch on the top of the MM-2 red dot sight allows the intensity of the 2 MOA red dot to be easily and quickly adjusted to the ambient light, for the best possible sight picture and shot placement. The MM-2 red dot sight is also night vision compatible.

Every lens surface of this sight has been fully multi-coated to produce maximum light transmission for the brightest possible sight picture. As a parallax free zero-magnification sight (1x), the shooter can acquire a target and take the shot without having to center the MM-2 in the lens. Properly sighted, the point of impact is where the dot is on the target - making the MM-2 ideal for those shots at running or flying game - or when a tense tactical situation escalates.

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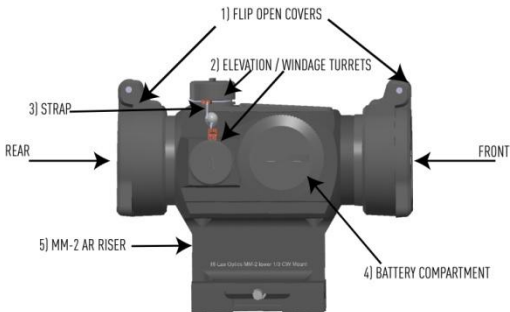
SECTION 1: SPECIFICATIONS, BASIC DEFINITIONS, AND ACCESSORIES

(1) SPECIFICATIONS:

Model	Power	Obj.	Eye Relief	LEN.	WGT.	W/E Adj.
MM-2 ACW	1X	20 mm	Unlimited	2.5"	3.8 oz	½ MOA
MM-2 L1/3	1X	20 mm	Unlimited	2.5"	3.8 oz	½ MOA

Each click of adjustment is 1/2 MOA. Both Elevation and Windage adjustment turrets have 40 clicks (20 MOA) per revolution. The total adjustments for both Elevation and Windage are a minimum of 100 MOA. A special illumination circuit is designed to control the illuminated dot size in a consistent shape and size. The dot size is 2 MOA. However the dot size may vary slightly, depending on the brightness of the dot. The **red dot** brightness can be controlled by pressing the "+" or "-" button to adjust for the appropriate dot brightness. There are 12 brightness settings, which are enumerated sequentially from 1 to 12, 1 being the lowest and 12 being the highest.

(2) BASIC DEFINITIONS:



(1) Flip-Up lens cover; (2) Elevation / Windage Adjustment Knob; (3) Strap to hold the Elevation and Windage covers; (4) Battery compartment. (5) MM-2 AR riser mount. The MM-2 low mount for pistols/shotguns is included;

(3) ACCESSORIES:

The MM-2 tactical red dot has the following accessories:

- (1) Honeycombed kill flash filter for objective lens.



- (2) Set of the Flip-Up lens covers



- (3) The MM-2 comes pre-mounted with either the Lower 1/3 Cowitness or Absolute Co-Witness AR Riser Mount. The Lower 1/3 Co-Witness AR Riser Mount is



approximately 1.63" tall. The Absolute

Co-Witness mount is approximately 1.43" tall. The MM-2 red dot also comes with a low profile mount for use with AK's, pistols or shotguns.



Four No. 10 Torx(Star)Head Screw

You can loosen the four No. 10 Torx head screws located at the bottom of the sight to change to the high or low mount. **Please securely retighten the 4 screws and apply blue LOCTITE on the 4 screws prior to mounting on a firearm.** The MM-2 red dot sight is cross compatible with most of the popular micro red-dot sight mounts available in today's market.

SECTION 2: INSTALLING BATTERY

When your MM-2 red dot sight becomes dim or does not light up at all, you need to replace the battery. The MM-2 red dot sight is powered by a 3V "coin style" CR2032 lithium battery. Unscrew the battery compartment (1) cover, and insert the battery positive ("+") side up and retighten the battery compartment cover. Once you have installed the new battery, the MM-2 turn on automatically. The default auto-shut off timer is 8 hours (see Section 4 for instructions on bypassing the shutoff timer). The MM-2 sight can also be shut off manually if you press "+" and "-" buttons simultaneously.

SECTION 3: MOUNTING YOUR SIGHT

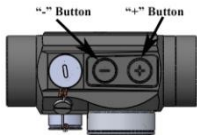
As there is no set eye relief for the MM-2 Tactical Red Dot, you can install the sight at any position on the gun you feel comfortable. Set the mount onto the rail. Align and seat the cross-bolt of the mount into the crosscut groove of the rail. Tighten the hardened No. 15 torx (star) screw. You can apply a maximum of 40 inch-pounds of torque on

the screw. The MM-2 is compatible with most commercially available micro **red dot** mounts.

WARNING: PRIOR TO MOUNTING YOUR MM-2, PLEASE CHECK THAT ALL FOUR TORX SCREWS ARE SECURELY TIGHTENED. WE RECOMMEND THAT YOU APPLY **BLUE LOCTITE** TO PREVENT THE MOUNT FROM LOOSENING DUE TO RECOIL.

SECTION 4: DIGITAL SWITCH INSTRUCTIONS

The MM-2 offers a programmable auto-shut off timer. The functions of the digital switch are as follows:



(1) Normal Key Operations:

Touch either the "+" or "-" button to turn on the MM-2. There are 12 total brightness settings. Pressing the "+" key will brighten the **red dot**. Pressing the "-" key will dim the **red dot**. You can adjust

the brightness to an appropriate setting based on your current lighting conditions. Once the LED reaches the highest or lowest brightness of the 12 settings, the LED brightness will not change any more even if you continue pressing the "+" or "-" key, respectively.

(2) Powering Off the Sight:

Holding the "+" and "-" keys simultaneously will power off the MM-2 **red dot**. The sight can also be powered off automatically by the auto-shutoff timer. The default auto-shut off time is 8 hours. You can program the auto-shut off time from 0 hour (always on) to 12 hours. See the following section on how to change the shut off timer.

(3) Programming the Auto-Shut Off Time Setting:

- a. To enter programming mode, hold the "+" key for 3 seconds until you see the red dot flashing. The number of flashes represents the hours of the current auto-shut off setting. If the red dot consecutively blinks 5 times, the MM-2 shutoff timer is set to 5 hours. When the flashing stops, the sight enters programming mode. **After 10 seconds the MM-2 Tactical Red Dot sight will automatically revert to the normal operation mode.**
- b. Once the sight enters programming mode, you can adjust the auto-shut off time by 1 hour each time you press the "+" or "-" key. The default auto-shut off time setting is 8 hours. The auto-shut off time setting can only be adjusted within

the range of 0 to 12 hours. Each time you press a key, you will see the red dot flash one time. Each flash means one hour has been adjusted up or down from the current position. After you finish programming, you can confirm the auto-shut off timer by holding down the "+" button for 3 seconds again until it flashes. The number of times the dot flashes is the number of hours for the new auto-shut off. To clarify, the first time you program the auto-shut off timer, you can adjust the time from factory default 8 hours up to 12 hours or down to 1 hour respectively. If you press the "-" key one time, you would reduce the auto-shut off time to 7 hours. If you press the "+" key one time, you would increase the auto-shut off time to 9 hours

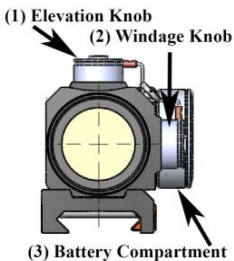
and so forth. The minimum auto-shut off time is 0 hour (always on) and the maximum auto-shut off time is 12 hours.

- c. To bypass the auto-shutoff timer, you have to continue to press and release the “-” button in programming mode until the red dot stops flashing. At this moment, the MM-2 auto-shutoff timer is set to 0 and the auto-shutoff is disabled. The MM-2 will not automatically shut off in manual mode; it will continue to stay on until you manually power off the sight.
- d. The MM-2 will remember your last saved brightness setting and auto-shutoff timer. However, when you change the battery, the settings revert to the factory default medium brightness and 8 hour auto-shutoff timer.

There is a special illumination circuit that is designed to display the illuminated dot in a consistent size and shape. The dot size is 2 MOA. However the dot size may vary slightly, depending on the brightness of the dot. **The MM-2's battery life is exceptionally long, and can be extended by powering off the sight when not in use.** The sight will also shut off once the auto-shut off timer has elapsed.

SECTION 5: ZEROING THE SIGHT

Once you touch any button, the MM-2 will power on. You will see the dot in the center of the sight. Then you need to follow the instructions stated in section 4.1 to adjust the brightness of the dot to suit your eye. The Elevation and Windage turrets allow for 20 MOA per revolution. The total adjustment for both Elevation and Windage is a minimum of 100 MOA.



After mounting the sight to your rail, rest your firearm on a solid surface. Look through the barrel and aim at a target 25 to 50 yards away. Look through your MM-2 and use the windage and elevation adjustments to align the red dot with the target as seen along the barrel. You should fire a test shot to determine the point of impact of your gun. If you did not hit the center of the target, then you can make the adjustments to either elevation or windage in the direction you want to move the point of impact. Both Elevation (1) and Windage (2) knobs are 1/2 MOA per click with 40 clicks (20 MOA) per revolution. Adjust the Elevation turret counterclockwise to move the point of impact UP. Adjust the Windage turret counterclockwise to move the point of impact to the RIGHT. Turning either turret clockwise moves the point of impact in the opposite direction.

Range	1 Hash Mark on the elevation	1 Hash Mark on the Windage
25 Yards	0.125 Inch	0.125 Inch
50 Yards	0.25 Inch	0.25 Inch
100 Yards	0.5 Inch	0.5 Inch

Elevation and Windage Adjustment Chart:

The elevation and windage adjustment chart will help you understand how to calculate the correct amount of adjustments. Each MOA adjustment will have a different inch drop at different ranges. One minute of angle is very close to 1 inch at 100 yards. At 50 yards one MOA is close to half an inch. At 25 yards, one MOA is close to 0.25 inch.

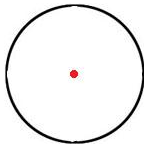
WARNING: ALL SHOOTING SHOULD BE DONE AT AN APPROVED RANGE, OR SAFE AREA. EYE AND EAR PROTECTION IS RECOMMENDED.

SECTION 6: RED DOT INFO

MM-2 Red Dot:

There is a red dot in the center of the sight picture. The dot size roughly measures 2 MOA.

The MM-2 does not have any magnification, so there is no set eye relief. You can mount the sight on your rifle at any distance from your eye that is comfortable for you to shoot. The red dot size is not controllable.



SECTION 7: MAINTAINING YOUR SIGHT

This sight, though amazingly tough, is a precision instrument that deserves reasonable and cautious care. For normal maintenance:

- A. Do not attempt to disassemble or clean the sight internally.
- B. The external optical lenses should occasionally be wiped with the microfiber lens cloth provided or optical quality lens paper.

- C. Keep the protective lens cover in place when the sight is not in use.
- D. Remove any external dirt or sand with a soft brush so as to avoid scratching the finish.
- E. Wipe the sight with a damp cloth, followed by a dry cloth.
- F. Then go over the metal portions of the sight with a silicon treated cloth in order to protect the sight against corrosion.
- G. Store the sight in a moisture-free environment.
- H. Avoid storing the sight in a hot place, such as the passenger compartments of a vehicle on hot days. The high temperatures could adversely affect the lubricants and sealants. A vehicle's trunk, a gun safe or a closet are the preferred storage locations.
- I. Never leave the sight where direct sunlight can enter either the objective or the eyepiece lens. Damage may result from the concentration of the sun's rays (burning glass effect).

WARNING: UNNECESSARY RUBBING OR USE OF A COARSE CLOTH MAY CAUSE PERMANENT DAMAGE TO LENS COATINGS.

SECTION 8: DIAMONDTUFF LIFETIME GUARANTEE

Hi-Lux, Inc. warrants its products against defects arising from faulty workmanship, or materials, for the lifetime of the product. **Normal wear and tear is not covered by this limited lifetime warranty.** Any attempt to alter, dismantle or change the standard specifications of the products, will make this warranty null and void. This warranty is made to the **original purchaser** of the goods including all international sales, and applies only to the products purchased through our authorized distributors or dealers. The international warranty is subject to approval from our authorized distributor or us directly. Warranty obligation is limited to the repair or replacement of any product returned to **Hi-Lux, Inc.**, which is determined by the manufacturer to have defects arising from faulty workmanship, or materials that adversely affect the satisfactory operation of the

product. It should be noted that on items containing an etched glass reticle that the occasional appearance of some small particles is common and not a warrantable repair. **There is a two-year warranty from the date of purchase for the electronic components that are contained on or within the products. Hi-Lux, Inc.** reserves the right to request proof of purchase and purchase date. To guarantee warranty service, the enclosed warranty form must be completed and returned or register online at www.hi-luxoptics.com within 90 days of purchase to establish all warranty rights between you, the original purchaser, and **Hi-Lux, Inc.** We assume no liability for any incidental or consequential damages, or incidental expenses. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you. No warranties are made, or are authorized to be made, other than those expressly contained herein. To file a claim under this warranty, please contact the Customer Service Department of **Hi-Lux, Inc.** at (310) 257-8142 to obtain a Return Authorization number (RA number). After receiving your RA

number, please mark the number on the outside of the package; enclose the defective item with a brief explanation of the problem. Please be sure to include your name, address and phone number. Failure to obtain a RA number may result in either refusal upon delivery, or lengthy delays for warranty repairs and service required for the item returned to us. All returns are to be shipped prepaid direct to **Hi-Lux, Inc.** including a check or money order in the amount of \$21 to cover postage and handling regardless of purchase date.

Attn.: Warranty & Service Dept.

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In the event of a non-warranty repair, you will receive an estimate prior to any work being done. This warranty gives you specific legal rights and you may have other rights, which vary from state

to state. As defined by federal law, this is a limited warranty.



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Precision Optics since 1969