

The
L.A.M.
Laser Aiming Module

Operator's
Manual



**INSIGHT
TECHNOLOGY
INCORPORATED**

**Models: 100/150
200/250
300/350
400/450**

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PRODUCT INTRODUCTION

The Laser Aiming Module (LAM) is available in two different series, Commercial and Law Enforcement. The Commercial series is denoted by the number “50” in the model number, eg. Model 150. The Commercial series offers a visible laser and visible illuminator only, NO infrared (IR).

The Law Enforcement (L.E.) series is denoted by the number “00” in the model number, e.g. Model 200. The L.E. series offers the Commercial capability plus IR pointer and illuminator.

Throughout this manual, language will be addressing the L.E. series primarily and readers with Commercial series LAM should simply disregard the references to IR.

WARNINGS

1. Before handling any firearm with the LAM, **read and understand** the entire contents of your firearm manual provided and the LAM manual, especially the safety precautions and procedures for safe firearms handling.
2. **Failure** to follow the correct safety precautions and safe firearms handling techniques outlined in your firearm and LAM Operator's manuals when handling a firearm with the LAM can result in serious injury, damage to property or **death**.
3. **Always** practice safe firearms handling techniques when handling a firearm with or without the LAM.
4. **Never** point a firearm with or without the LAM attached, at anything or anyone that you do not intend to shoot.
5. Once the LAM is attached to a firearm, the firearm will be pointed at anything that the LAM is directed at. **Do not** point the LAM at anything or anyone that you do not intend to shoot. The LAM is designed to produce a sufficient amount of light to allow someone in a low light environment to be safely illuminated and identified without the need to point the LAM, and the attached firearm, directly at that individual. The light from the LAM can be pointed in a safe direction at a wall, floor or ceiling and "bounced" onto the darkened silhouette for identification purposes, thus avoiding the need to point the firearm directly at an individual. The LAM can be de-focused for wide-angle illumination.
6. The ON/OFF switch on the LAM allows you to operate the switch **without** placing your finger inside the trigger guard. **Always** keep your fingers **off** the trigger and **outside** the trigger guard until you are ready to fire the weapon.
7. **Always** check to see the chamber of the weapon is empty or "clear" before attempting to mount or dismount the LAM. Follow the "clearing" procedures as set forth in the manual for your firearm.
8. **Always** remove the LAM from the firearm when performing maintenance or cleaning on the LAM or when replacing bulbs or batteries.
9. **Failure** to follow any of the safety warnings listed above when handling a firearm and/or the LAM can be dangerous and can result in serious injury, damage to property or **death**.
10. The LAM should be tested periodically during periods of non-usage to ensure its proper functioning. When anticipating usage of and reliance upon the LAM, check the LAM beforehand to ensure proper working order.
11. Proper functioning of the LAM is dependent upon fully-charged batteries. Use care when handling batteries. Any battery may leak harmful chemicals which may damage skin, clothing or the inside of the LAM. To avoid risk of injury, do not let any material leaked from a battery come in contact with eyes or skin. Do not expose batteries to excessive heat. Follow battery manufacturers' instructions as to proper handling, storage and disposal of batteries.
12. **CAUTION: Never** place the light on its face (bulb down) while on. The bulb generates intense heat and could cause damage to the LAM or the surface it is on.

SAFETY SUMMARY



LASER RADIATION - AVOID DIRECT EXPOSURE TO BEAM

	<u>VISIBLE LASER</u>	<u>INFRARED LASER</u>	<u>INFRARED ILLUMINATING LASER</u>
Output Power:	<5 mW	.05 - .10 mW	.15 - .65 mW
Wavelength:	640±40nm	830 ± 50 nm	830 ± 50 nm
Class IIIb Laser product			

- Viewing of Infrared (IR) operation should only be done with night vision goggles or other protective eyewear.
- Do not stare into the visible laser beam.
- Do not look into the visible laser beam through binoculars or telescopes.
- Do not point the visible laser beam at mirror like surfaces.
- Do not shine the visible laser beam into other individuals' eyes.
- Do not force adjusters beyond their intended travel.

SAFETY SUMMARY





	AVOID EXPOSURE - LASER RADIATION IS EMITTED FROM THESE APERTURES		
			
	LASER RADIATION - AVOID DIRECT EXPOSURE TO BEAM		
	OUTPUT POWER	<u>VISIBLE LASER</u> < .5 mW	<u>IR LASER</u> < .7 mW
	WAVELENGTH	640 ± 40 nm	830 ± 50 nm
CLASS IIIb LASER PRODUCT			
CONFORMS TO 21 CFR 1040. LASER PRODUCTS. EXCEPT AS AUTHORIZED BY VARIANCE 00V-0610 EFFECTIVE MARCH 16, 2000		MODEL NO.	

Figure 1: LAM Certification/Warning/Aperture Label

FOR THE LOCATION OF THE LASER WARNING LABEL ON THE UNIT, SEE FIGURE 7.

WARNING

DO NOT STORE THE LAM WITH BATTERIES INSTALLED.

CAUTION

DO NOT OVER ADJUST THE ADJUSTERS.

HOW TO USE THIS MANUAL

USAGE:

You must familiarize yourself with the entire manual before operating the equipment. Please read Section VI Maintenance, before performing any maintenance on your Laser Aiming Module. Observe and follow all **WARNING**, **CAUTIONS**, and **NOTES**.

MANUAL OVERVIEW:

The manual contains sections for Operating and Maintaining the LAM. A list of Repair Items is in Appendix A.

SECTION I

GENERAL INFORMATION



Figure 2: LAM shown mounted on Beretta pistol with adapter.

1.1 GENERAL INFORMATION

a. Type of Manual:

Operator (Including Repair Parts and Special Tools List).

b. Model Number and Equipment Name:

- LAM-100/150 = Laser Aiming Module, with Slide-lock Interface
- LAM-200/250 = Laser Aiming Module, with Rail-grabber Interface
- LAM-300/350 = Laser Aiming Module, with H&K USP Interface
- LAM-400/450 = Laser Aiming Module, with H&K MK-23 Interface

c. Manufacturer:

Insight Technology Incorporated
3 Technology Drive
Londonderry, NH 03053
Phone: (603) 626-4800 Fax: (603) 647-7234

d. Purpose of Equipment:

To visibly illuminate and direct fire for users equipped with firearms in low-light, close quarters combat situations, with or without the use of night vision goggles.

e. Warranty Information:

This item shall conform to design, manufacturing, and performance requirements and be free from defects in material and workmanship for one (1) year from the date of shipment. If item is defective, notify the manufacturer (see page 28).

SECTION II

EQUIPMENT DESCRIPTION

2.1 SYSTEM DESCRIPTION

The LAM is a critical component of a close quarters combat, offensive weapon system. This weapon system is made up of the Laser Aiming Module (LAM) unit, a weapon adapter (if applicable), and the weapon.

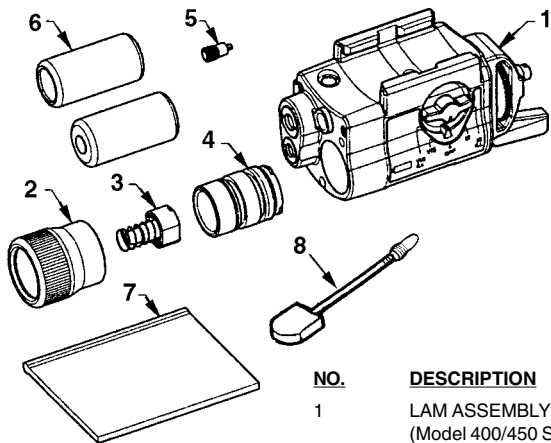
The LAM provides the user with VISIBLE and INFRARED illumination of the target for target acquisition, and VISIBLE and INFRARED target aiming points for fire control. Both VISIBLE and INFRARED laser aiming beams can be zeroed to the weapon. The VISIBLE illuminator beam can be focused by turning the illuminator's bezel.

2.2 GENERAL CHARACTERISTICS

WEIGHT AND DIMENSIONS

Weight (w/two DL123A Lithium Batteries)	5.0 oz.
Length	11.5 cm (4.23 in.)
Width	5.75 cm (1.53 in.)
Height	6.53 cm (1.97 in.)
Output Power	
Visible Laser	< 5mW
White Light Illumination	> 60 Lumens
IR Laser	< 0.7 mW
IR Illuminator	.15 - .65 mW

2.1 DESCRIPTION OF MAJOR COMPONENTS



<u>NO.</u>	<u>DESCRIPTION</u>
1	LAM ASSEMBLY (Model 400/450 Shown)
2	BEZEL ASSEMBLY
3	BULB ASSEMBLY
4	BEZEL MOUNT ASSEMBLY
5	INTEGRAL ADJUSTER TOOL
6	LITHIUM BATTERIES, (2) DL123A
7	OPERATOR'S MANUAL
8	REMOTE SWITCH

Figure 3: LAM Major Components

2.1 DESCRIPTION OF MAJOR COMPONENTS, continued

1) LAM ASSEMBLY

The LAM Assembly is a compact, lightweight, advanced electro-optical assembly which provides a highly collimated beam of VISIBLE and INFRARED light for weapon aiming and target illumination.

2) BEZEL

The Bezel is made up of the bulb reflector and external window/housing.

3) BULB ASSEMBLY

The Bulb Assembly is a Tungsten Halogen light source providing over 60 lumens of white light illumination.

4) BEZEL MOUNT ASSEMBLY

The Bezel Mount serves as the battery cap for the battery housing and the Bezel mounting interface.

5) INTEGRAL ADJUSTER TOOL

The Adjuster Tool is provided to adjust the azimuth and elevation adjusters during the zeroing process. This tool is easy to access and stows conveniently on the front of the LAM.

6) BATTERIES (2) DL123A

Two DL123A Lithium batteries are used as a power supply for operating the LAM.

7) MANUAL

The Manual details operation, maintenance, and general information about the LAM.

8) REMOTE SWITCH

The remote switch allows optional momentary activation.

SECTION III

PROPER MOUNTING POSTIONS AND PROCEDURES

3.1 Mounting and Removing the LAM

The LAM is equipped with an integral mounting top cover which is designed to directly interface with specific weapons which either have their own accessory mounting rail, or require an Insight specified adapter.



Figure 4: Mounting of the LAM-100 onto the Beretta pistol with adapter.

WARNING

Make sure the weapon is CLEAR and on SAFE before proceeding.
The following LAM mounting procedures should be performed with the LAM's viewports pointing in the same direction as the weapon.

For LAM-100/150 mounting, align the integral mounting top cover of the LAM with the weapons accessory mounting rail. Slide the LAM back, onto the rail, until the latch bar “clicks” into position. Ensure engagement by attempting to slide the unit forward. **To Remove**, depress latch bar with thumb and forefinger to release tension and slide forward.

For LAM-200/250 mounting to Picatinny style rails, turn the knurled screw-head of the rail-grabber top cover, counter clockwise, to allow the unit's jaws to open and straddle the weapon's accessory mounting rail. Align the jaw bolt with the rail recoil groove, and position the integral mounting top cover of the LAM against the weapon's rail. Once seated on the rail, turn the jaw's knurled screw-head clockwise to tighten the jaws snugly around the rail. **DO NOT OVERTIGHTEN. To Remove**, loosen jaws.

For LAM-300/350 mounting to the H&K USP pistol, turn the slotted screw-head of the rail-grabber top cover, counter clockwise, to allow the unit's jaws to open and straddle the pistol's accessory mounting rail. Position the integral mounting top cover of the LAM within the pistol's rail. Once seated on the rail, turn the jaw's slotted screw-head clockwise to snugly clamp around the rail. **DO NOT OVERTIGHTEN. To Remove**, loosen jaws.

For LAM-400/450 mounting to the H&K Mk-23 pistol, align the integral mounting top cover of the LAM with the pistol's accessory mounting rail. Slide the LAM back, onto the rail, until the unit reaches the trigger guard. Slowly turn the thumbscrew of the LAM to engage the unit into the threaded hole of the trigger guard, hand tighten the thumbscrew to firmly secure the LAM against the pistols trigger guard. **DO NOT OVERTIGHTEN. To Remove**, reverse the sequence.

SECTION IV

OPERATING INSTRUCTIONS

4.1 General

This section contains a description of battery installation, the mode switch, the toggle switch and boresight adjusters.



**VISIBLE AND INVISIBLE LASER RADIATION
AVOID DIRECT EYE EXPOSURE**



- Do not stare into the laser beam.
- Do not look into the laser beam through binoculars or telescopes.
- Do not point the laser beam at mirror like surfaces.
- Do not shine the laser beam into other individuals' eyes.

4.2 LAM Controls and Adjustments

WARNING

**DO NOT STORE THE LAM WITH BATTERIES INSTALLED.
LET BULB ASSEMBLY COOL PRIOR TO SERVICING.**

a. Battery Installation, see Figure 5 below:

1. With the visible illuminator's bezel and bulb assembly removed, depress the Bezel Mount and turn Counter Clock-Wise (CCW) until the Bezel Mount ejects from the LAM assembly.
2. Install two (2) DL123A lithium batteries. Orient the batteries as indicated by the markings on the LAM body. It may be necessary to shake the unit to properly align the first battery into place inside the housing.
3. Reinstall the Bezel Mount by inserting the contact end into the body, lining-up the bayonet style feature and pushing firmly while turning in a Clock-Wise (CW) direction until it locks into position.
4. Reinstall the Bulb Assembly followed by the Bezel Assembly by carefully threading CW onto the bezel mount.

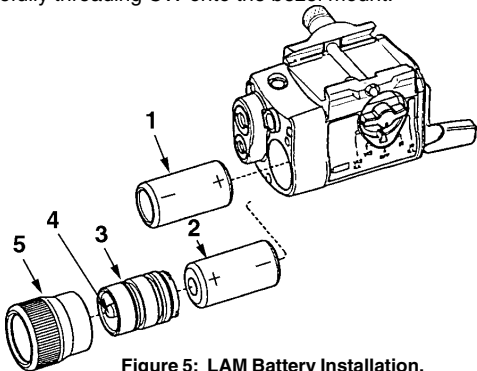


Figure 5: LAM Battery Installation.

b. Mode Selector, Figure 6

The Mode Selector is used to set the mode in which the LAM will operate when the toggle switch is activated. The Mode Selector has two (2) visible feature positions, two (2) IR feature positions and an OFF position.

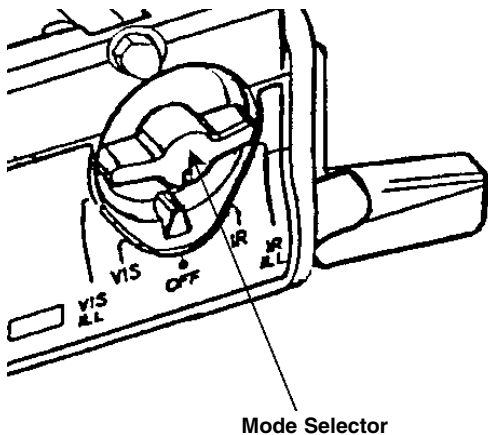


Figure 6: The Mode Selector.

b. Mode Selector, continued

<u>Knob Position</u>	<u>Operation</u>	<u>Remarks</u>
OFF	The LAM will not operate.	When not in use the mode switch should be OFF to preclude inadvertently turning the unit ON.
VIS	The visible aiming beam operates.	The visible laser aiming point is enabled. Pressing the toggle switch or remote switch will activate the laser.
VIS/ILL	The visible aiming beam operates with the visible illuminator.	The visible laser aiming point and the visible flashlight are enabled. Pressing the toggle switch or remote switch will activate the laser and flashlight. The laser inactivator switch will inactivate the visible laser pointer in this mode only. (See section d)
IR	The infrared aiming beam operates.	The infrared laser aiming point is enabled. Pressing the toggle switch or remote switch will activate the infrared laser.
IR/ILL	The infrared aiming beam operates with the infrared illuminator.	The infrared laser aiming point and the infrared flashlight are enabled. Pressing the toggle switch or remote switch will activate the laser and flashlight simultaneously.

Table 1: Switch Modes.

c. Toggle Switch

The integral toggle switch activates the LAM in either momentary or steady-on modes.

For momentary operation, toggle the switch to the left or right, slightly, until the LAM turns ON. When the toggle is released, the LAM turns OFF.

For continuous operation, toggle the switch left or right until the toggle locks in a detent. *Note: Simply releasing the lever will not deactivate the LAM while in this position.* The operator must toggle the switch lever in the opposite direction until the detent is disengaged.

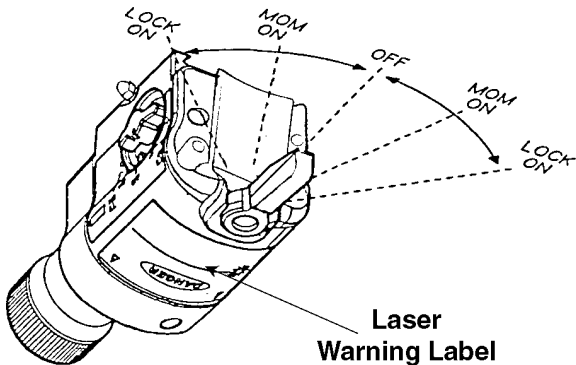


Figure 7: Operation of the Toggle Switch

d. Laser Inactivator Switch

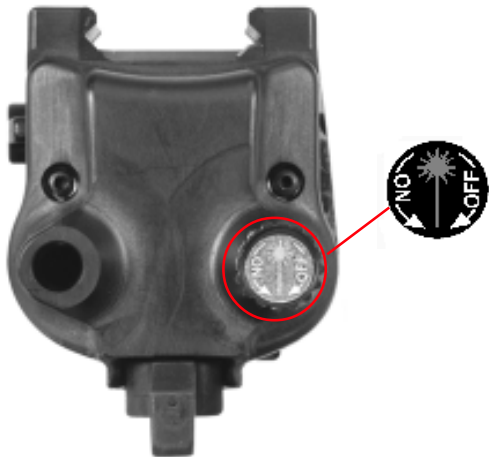


Figure 8: Laser Inactivator Switch.

The Laser Inactivator Switch, located on the rear cover, allows the user to inactivate the unit's visible aiming laser while in the "visible laser/visible illuminator" mode only. In doing so, the user can now operate the LAM as a flashlight.

As the label depicts, rotation of the knob in a CW direction turns the visible laser OFF. Rotation in a CCW direction turns the laser ON.

The knob has a 180 degree rotation to activate and deactivate.

e. Adjusters

The LAM is equipped with boresight adjusters for zeroing the visible aiming beam and the infrared aiming beam to a weapon (see **Figure 9** below). The LAM adjusters move the beams in horizontal and vertical directions. When zeroing the LAM it is important to zero the visible aiming beam to the weapon's point of impact. **Table 2** indicates the direction of adjuster rotation and subsequent shot group movement (point of impact) for zeroing the visible aiming beam to the weapon.

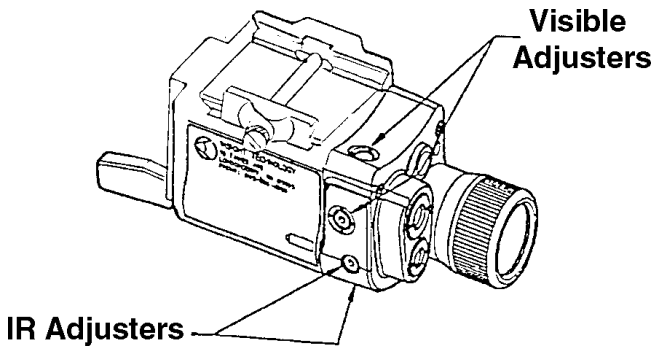


Figure 9: Boresight Adjusters for Visible and IR Aiming Beams.

e. Adjusters, continued

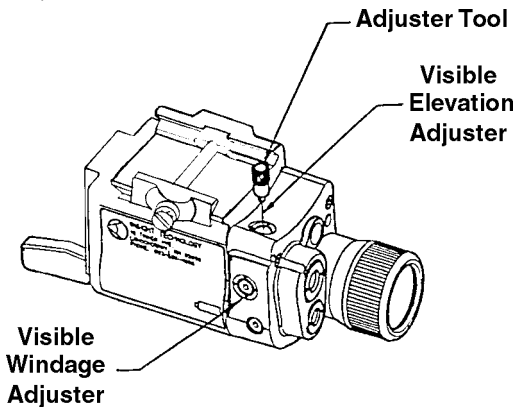


Figure 10: Boresight Adjusters for Visible Laser.

Zeroing the Visible Aiming Spot	Adjuster Movement	Shot Group Movement
Top Adjuster Elevation	CW CCW	Down UP
Top Right Side Adjuster Azimuth (windage)	CW CCW	Left Right

Table 2: Adjuster Rotation and Shot Group Movement for the Visible Aiming Beam.

e. Adjusters, continued

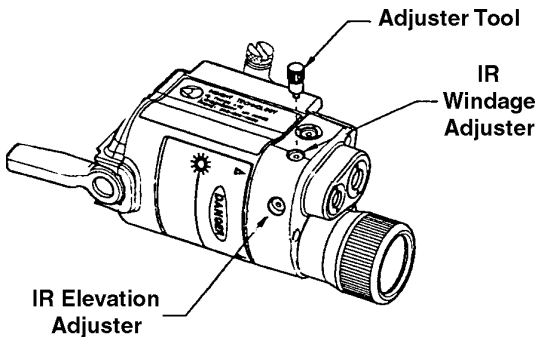


Figure 11: Boresight Adjusters for Infrared Laser.

Zeroing the Infrared Aiming Beam	Adjuster Movement	Shot Group Movement
Bottom Adjuster Elevation	CW CCW	Down Up
Lower Right Side Adjuster Azimuth (windage)	CW CCW	Left Right

Table 3: Adjuster Rotation and Shot Group Movement for the Infrared Aiming Beam.

f. Focus Knob for the Visible Illuminator

Visible Illumination focus can be achieved by rotating the illuminator bezel with your thumb and forefinger around the edge of the bezel. The bezel can be rotated freely too obtain the desired spot size.

CAUTION: Rotating the bezel to far counter clockwise will result in bezel removal.

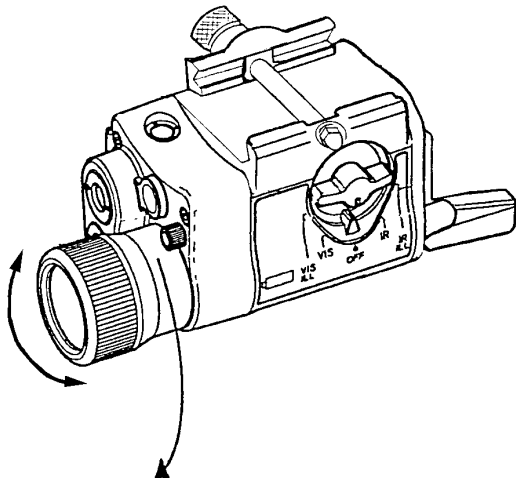


Figure 12: Using The Focus Knob for Visible Illumination.

SECTION V

ZEROING PROCEDURES

5.1 This section provides information on zeroing the LAM using a 25 meter range and target.

5.2 Zeroing on a 25 Meter Range.

WARNINGS

Be sure of your target and background before firing. When you squeeze the trigger, you must expect the pistol to fire and you must take full responsibility for firing it.

Before handling any firearm with the LAM read and understand the entire contents of your firearm manual provided and the LAM manual, especially the safety precautions and procedures for safe firearms handling.

Always check to see the chamber of the weapon is empty or “clear” before attempting to mount or dismount the LAM. Follow the “clearing” procedures as set forth in the manual for your firearm.

a. Visible Aiming Beam

1. Set up a target at 25 meters with a clearly visible aiming point.
2. Position the LAM onto the weapon’s accessory mounting rail.
3. Slide the LAM forward, on the rail, until the top adjuster screw become accessible for the adjuster tool.
4. Select the visible operating mode using the rotary switch knob on the side of the LAM.
5. Remove the adjuster tool from the LAM body by turning it CCW.
6. Turn ON the visible laser aiming point by pushing the ON/OFF toggle switch to one side until it clicks ON.

5.2 Zeroing on a 25 Meter Range, continued

7. While aiming the pistol through the iron sights, using the adjuster tool, adjust the visible aim point of the LAM by turning the adjusters, as needed, to superimpose the beam's aiming point over the weapon's iron sight aim point. Refer to Table 2 and Figure 13 Below.

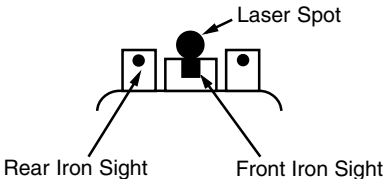


Figure 13: Iron Sights and Laser Spot

8. Return the LAM to its proper mounting position. Refer to Section III.
9. Aim and fire a three round shot group into the center of the target aiming point at 25 meters.
10. Compare the impact point of the shot group to where the beam's aiming point was on the target to ensure they line up.
11. Make the necessary adjustments to the beam to ensure it's aiming point and the spot group are aligned.
12. Turn the unit OFF, remove LAM from the weapon, and return the adjuster tool to it's location on the front of the LAM.

The same procedure can be used for the IR pointer and by referencing Table 3.

SECTION VI MAINTENANCE

WARNINGS

Always check to see the chamber of the weapon is empty or “clear” before attempting to mount or dismount the LAM. Follow the “clearing” procedures as set forth in the manual for your firearm.

Make sure the weapon is clear and on SAFE before proceeding. Let bulb assembly cool prior to servicing.

6.1 Maintenance of the LAM

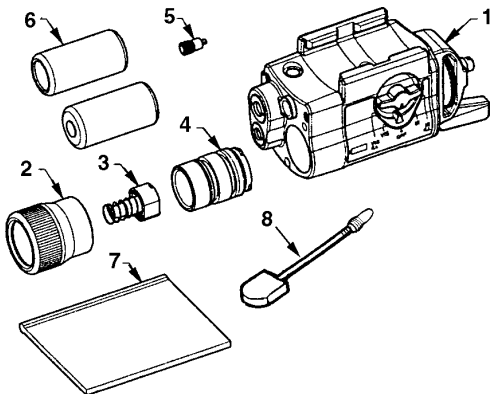
Clean the LAM by rinsing with water and wiping with a soft cloth. Such cleaning should be done whenever the LAM becomes dirty or after exposure to salt water.

Regularly remove dirt and residue from the remote cable receptacle on the back of the unit with soapy water and cotton swab.

To clean the aiming and illumination beam windows, wipe using a soft cloth with clean water, alcohol, or general purpose window cleaner. Prior to use under water, inspect the O-ring seal in the Bezel Assembly to make sure they are free of sand and dirt particles. If the O-ring becomes cut, nicked, or dried out, it should be replaced. If the Bezel Mount Assembly is scratched in the O-ring seating area, it should be replaced. Periodically lubricate the O-ring with fluorinated grease. A list of repair parts is contained in **Appendix A**. All repair parts can be installed at the operator or unit level. Special tools or equipment are not required for maintaining the LAM.

APPENDIX A

LAM REPAIR ITEMS



<u>ITEM</u>	<u>Description</u>	<u>Part No.</u>
1	LAM Assembly	LAM-000
2	Bezel Assembly	LAM-005
3	Bulb Assembly	HKL-113
4	Bezel Mount Assembly	LAM-006
5	Integral Adjuster Tool	LAM-135
6	Batteries, (2) DL123A Lithium	DL123ABK
7	Operator's Manual	LAM-198
8	Remote Switch	HKL-273
Items Not Shown		
10	O-Rings	A5-568A-016
11	Latch Spring	GLL-011
12	Latch Bar	GLM-012
13	Jack Plug	HKL-313

Figure 14: LAM Repair Items.

LIMITED WARRANTY

INSIGHT TECHNOLOGY INCORPORATED

12 MONTH LIMITED WARRANTY

Insight Technology Incorporated warrants for 12 months after purchase that its products will be free from defects in material and workmanship. Insight Technology Incorporated will repair or replace, at its option, any product or part (with the exception of the lamp and battery) which is found to be defective under normal use and service, without charge. Insight Technology Incorporated's obligation to repair or replace, at Insight's option, shall be the purchaser's sole and exclusive remedy under this warranty. Warranty does not cover battery leakage. Contact battery manufacturer in this event.

This warranty extends only to the original owner. There are no warranties, express or implied, other than as set forth on this page, and Insight Technology Incorporated disclaims any warranties of merchantability or fitness for a particular purpose. Insight Technology Incorporated shall not be liable for incidental, consequential or special damages arising out of or in connection with product use or performance. For service or repair, return unit UPS prepaid with a copy of the sales receipt to Insight Technology Incorporated.

SERVICE: OF THE LASER AIMING MODULE (LAM)

For service or repair, please call for an authorization number before returning unit. Send via UPS prepaid with a copy of the sales receipt to:

Insight Technology, Inc.
3 Technology Drive
Londonderry, NH 03053

ATTN: COMMERCIAL SALES

Phone: 603-626-4800 / Fax: 603-647-7234

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ITAR 22CFR 120-130 regulations and requires a license to export.**



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