



7X50
7X50C
8X30C
8X36
10X42



USER'S MANUAL

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HOW TO USE THIS MANUAL

USAGE

You must familiarize yourself with the entire manual before operating the equipment. Before performing any kind of maintenance on your device, read the section on maintenance in its entirety. Follow all WARNINGS, CAUTIONS, and NOTES.

MANUAL OVERVIEW

This manual contains sections on Operating and Maintaining the 7x50, 7x50C, 8x30C, 8x36, and 10x42 Binoculars.

The information provided in this manual is for familiarization purposes only. The contents may undergo further changes with no commitment by Armasight to notify customers of any updates.

Armasight assumes no responsibility for any misprints or other errors that this manual may contain.

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SAFETY SUMMARY

Before operating this product, carefully read and study this Operation and Maintenance Manual.

The Armasight Binoculars are a precision optical instrument, and requires careful handling. To avoid damage to the equipment or physical harm to the user when operating the binoculars, follow all WARNINGS, CAUTIONS and NOTES.

Below you will find definitions of the following alerts that appear throughout this Manual:

WARNING — Identifies a clear danger to the person operating the equipment.

CAUTION – Identifies risk of damage to the equipment.

NOTE – Serves to highlight essential procedures, conditions, and statements, or convey important instructional data to the user.

WARNING:

This product contains natural rubber latex which may cause allergic reactions! The FDA has reported an increase in the number of deaths that are associated with an apparent sensitivity to natural latex proteins. If you are allergic to latex, it is a good idea to learn which products contain it and strictly avoid exposure to those products.

WARNINGS:

Do not watch the sun directly by using binoculars to avoid to harm your eyes.

CAUTION:

- The binoculars are a precision optical instrument, and must be handled carefully at all times to prevent damage to the device.
- The unit may be badly damaged if the tripod on which it is mounted collapses or overturns. Remove the unit from the tripod if it is not within your reach.
- Be away from the ferromagnetism material during the storage the binoculars with compass, otherwise the compass will work in big error or improperly.
- Do not turn the diopter adjustment handwheel in overexerting, stop to turn when it reach the limited postion, otherwise the eyepieces assembly will be damaged!
- Be carefull to move the binoculars to avoid overexerting or collision.
- To avoid the heavy vibration when you take it.
- Thoroughly dry each component of the binoculars before placing them in the storage case.

NOTES:

For the purpose of returning defective components, retain all packaging materials.

INTRODUCTION

1.1 GENERAL INFORMATION

1.1.1 TYPE OF MANUAL

Operation and Maintenance.

1.1.2 MODEL NUMBER AND EQUIPMENT NAME

Armasight 7x50 Binoculars.

Armasight 7x50C Binoculars.

Armasight 8x30C Binoculars.

Armasight 8x36 Binoculars.

Armasight 10x42 Binoculars.

1.1.3 PURPOSE OF EQUIPMENT

The Armasight Daytime Binoculars that offers plenty of magnification, waterproof construction, built-in range finder reticle purposed for Military, Law Enforcement or an outdoor adventurer's needs.

1.2 WARRANTY INFORMATION AND REGISTRATION

1.2.1 WARRANTY INFORMATION

This product is guaranteed to be free from manufacturing defects in material and workmanship under normal use for a period of two (2) years from the date of purchase. In the event that a defect covered by the below warranty occurs during the applicable period stated above, Armasight, at its discretion, will either repair or replace the product; such action on the part of Armasight shall be the full extent of Armasight's liability, and the Customer's sole and exclusive reparation. This warranty does not cover a product if it has (a) been used in ways other than its normal and customary manner; (b) subjected to misuse; (c) subjected to alterations, modifications or repairs by the Customer or by any party other than Armasight without prior written consent of Armasight; (d) special order or "close-out" merchandise or merchandise sold "as-is" by either Armasight or the Armasight dealer; or (e) merchandise that has been discontinued by the manufacturer and either parts or replacement units are not available due to reasons beyond the control of Armasight. Armasight shall not be responsible for any defects or damage that in Armasight's view are a result from the mishandling, abuse, misuse, improper storage or improper operation of the device, including use in conjunction with equipment that is electrically or mechanically incompatible with, or of inferior quality to, the product, as well as failure to maintain the environmental conditions specified by the manufacturer. This warranty is extended only to the original purchaser. Any breach of this warranty shall be enforced unless the Customer notifies Armasight at the address noted below within the applicable warranty period.

The Customer understands and agrees that except for the foregoing warranty, no other warranties written or oral, statutory, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, shall apply to the product. All such implied warranties are hereby and expressly disclaimed.

1.2.2 LIMITATION OF LIABILITY

Armasight will not be liable for any claims, actions, suits, proceedings, costs, expenses, damages or liabilities arising out of the use of this product. Operation and use of the product are the sole responsibility of the Customer. Armasight's sole undertaking is limited to providing the products and services outlined herein in accordance with the terms and conditions of this Agreement. The provision of products sold and services performed by Armasight to the Customer shall not be interpreted, construed, or regarded, either expressly or implied, as being for the benefit of or creating any obligation toward any third party of legal entity outside Armasight and the Customer; Armasight's obligations under this Agreement extend solely to the Customer. Armasight's liability hereunder for damages, regardless of the form or action, shall not exceed the fees or other charges paid to Armasight by the Customer or Customer's dealer. Armasight shall not, in any event, be liable for special, indirect, incidental, or consequential damages, including, but not limited to, lost income, lost revenue, or lost profit, whether such damages were foreseeable or not at the time of purchase, and whether or not such damages arise out of a breach of warranty, a breach of agreement, negligence, strict liability or any other theory of liability.

1.2.3 PRODUCT WARRANTY REGISTRATION

In order to validate the warranty on your product, Armasight must receive a completed Product Warranty Registration Card for each unit, or the Customer can complete a warranty registration form on our website at www.armsight.com. Please complete the included form and immediately mail it to our Service Center:

Armasight Inc.

815 Dubuque Avenue

South San Francisco, CA 94080

USA

1.2.4 OBTAINING WARRANTY SERVICE

To obtain warranty service on your unit, the End-user (Customer) must notify the Armasight service department via email. Send any requests to service@armsight.com to receive a Return Merchandise Authorization number (RMA). When returning any device, please take in the product to your retailer, or send the product, postage paid and with a copy of your sales receipt, to Armasight's service center at the address listed above. All merchandise must be fully insured with the correct postage; Armasight will not be responsible for improper postage or merchandise that becomes lost or damaged during shipment. When sending product back, please clearly write the RMA# on the outside of the shipping box. Please include a letter that indicates your RMA#, the Customer's Name, a Return Address, reason for the return, Contact information (valid telephone numbers and/or an e-mail address), and proof of purchase that will help us to establish the valid start date of the warranty. Product merchandise returns that do not have an RMA# listed may be refused, or a significant delay in processing may occur. Estimated Warranty service time is 10-20 business days. The End-user/ Customer is responsible for postage to Armasight for warranty service. Armasight will cover return postage/ shipping after warranty repair to the End-user/ Customer only if the product is covered by the aforementioned warranty. Armasight will return the product after warranty service by domestic UPS Ground service and/ or domestic mail. Should any other requested, required or international shipping methods be necessary, the postage/ shipping fee will be the responsibility of the End-user/ Customer.

DESCRIPTION AND DATA

2.1 SYSTEM DESCRIPTION

The Armasight Daytime Binoculars that offers plenty of magnification, waterproof construction, built-in range finder reticle purposed for Military, Law Enforcement or an outdoor adventurer's needs.

The Armasight binoculars provides a powerful magnification and crystal clear optics, that deliver a full range of color and clarity. The multicoated optics of binoculars is designed to enhance the resolution and contrast of your image in extremely bright conditions.

Built-in universal range finder allows for accurate target measurements and range estimates.

The Armasight binoculars are waterproof and shockproof and can reach the standard of GJB/240, GJB150 and MIL-STD-810.

Armasight 7x50 is the binoculars with a range finding reticle.

Armasight 7x50C is the binoculars with inter-build compass and a range finding reticle.

Armasight 8x30C is the compact binoculars with inter-build compass and a range finding reticle.

Armasight 8x36 is the compact binoculars with a range finding reticle.

Armasight 10x42 is the binoculars with a range finding reticle.

2.2 SPECIFICATIONS

ITEM	7x50	7x50C	8X30C	8X36	10X42
Magnification	7x	7x	8x	8x	10x
Objective Lens Diameter (mm)	50	50	30	36	42
Field of View (deg.)	7.5	7.5	8.0	7.0	6.0
Exit Pupil (mm)	7.1	7.1	3.7	4.4	4.2
Eye Relieve (mm)	23	23	18	16	15
Resolution (SOA)	≤4.5	≤4.5	≤4.5	≤6.2	≤8.6
Transmissivity (%)	>83 (w/reticule) >90	>83 (with reticule) >90	>83 (with reticule) >90	>83 (with reticule) >90	>83 (with reticule) >90
Relative Brightness	50.4	50.4	14.0	20.3	17.6
Dimensions (mm)	150x85x200	150x103x200	120x77x167	127x65x165	155x55x132
Weight (g)	1360	1370	600	600	760

2.3 KEY FEATURES

- **Designed for professional use**
- **Waterproof and shockproof to military standard MIL-STD-810**
- **Built-in Universal Rangefinder**
- **Multicoated Optics**
- **Full rubber body armoring**
- **Individual Eye Focus**
- **Limited two-year Warranty**

OPERATING INSTRUCTIONS

WARNINGS:

Do not watch the sun directly by using binoculars to avoid to harm your eyes.

3.1 PARTS AND CONTROLS OF BINOCULARS

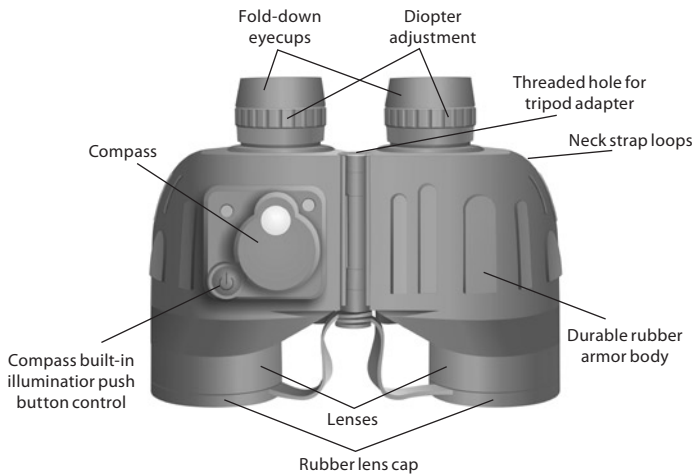


Figure 1. Parts and Controls of Binoculars

3.2 BINOCULARS ASSEMBLY

Please assembly the binoculars belt before using, see Figure 2.

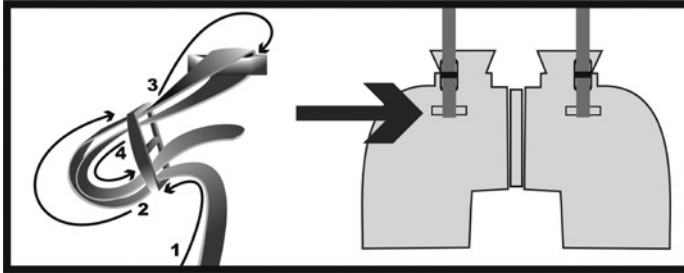


Figure 2. Neck Strap Attaching

Be make sure to install the batteries into the binoculars if the binoculars need the power to illuminate the compass (7x50C and 8x30C models). Two LR44 1.5V alkaline batteries used to power the 7x50C and 8x30C.

The batteries for the compass will be exhausted if the internal lighting system has been used long periods of time. Batteries can also become weak if not used for a prolong period of time. If so, open the battery cover and replace with fresh batteries.

CAUTION:

The two batteries should be replaced at the same time. The batteries should be taken out if the binoculars will not be used for a long time. Batteries left in the binoculars for prolong periods of time without being used may leak and cause damage to the binoculars.

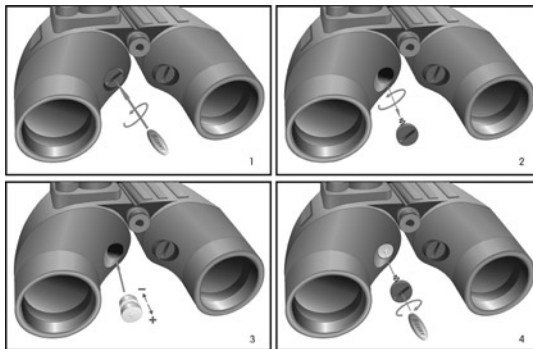


Figure 3. Battery Installation (7x50C and 8x30C only)

3.3 INTERPUPILLARY ADJUSTMENT

You must first adjust the binoculars so that each eye piece is adjusted to the distance between your eyes. This is done by putting the binoculars in both hands and bending it until you can see a single circular image.

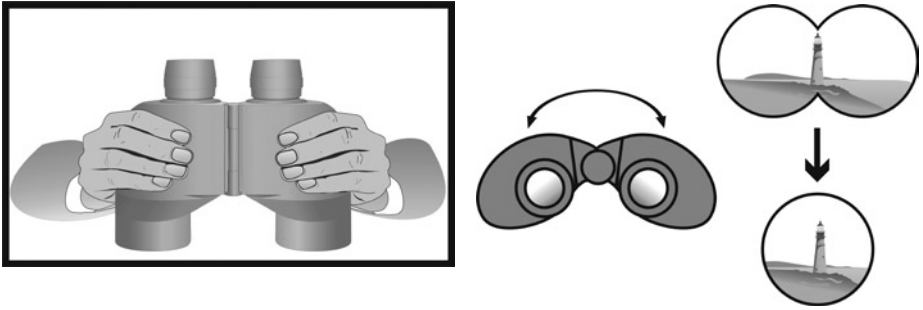


Figure 4. Interpupillary Adjustment

3.4 DIOPTR ADJUSTMENT

To watch the object by handing the binoculars , You will need to close your left eye. Rotate the right diopter adjustment rings untill the object image appears sharp and clear in your right eye opening. Then open you left eye and close right eye, rotate the left diopter adjustment rings untill the object image appears sharp and clear in your left eye opening. Then can get a perfect viewing.

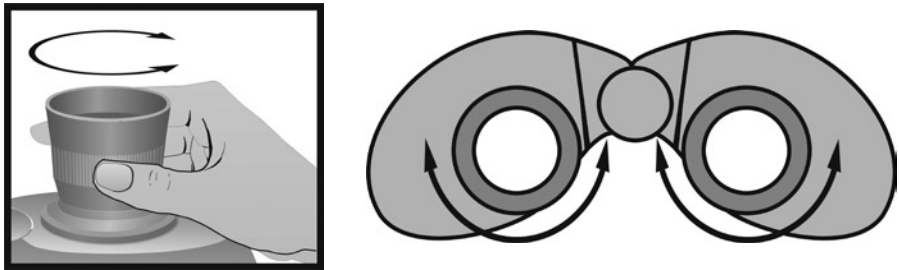


Figure 5. Diopter Adjustment

3.5 RETICLE USING

3.5.1 ARMASIGHT BINOCULARS RANGEFINDER RETICLES

The 7x50C and 8x30C reticle has horizontal scale and vertical scale, in the below there is compass scale (see Figure 6). Vertical and horizontal lines on the reticle is in mils as unit. Each small division on both vertical and horizontal lines represents 5 mils and each big division represents 10 mils. You can obtain the azimuth angle, upper and lower angle, distance and height or width etc. by using this reticle.

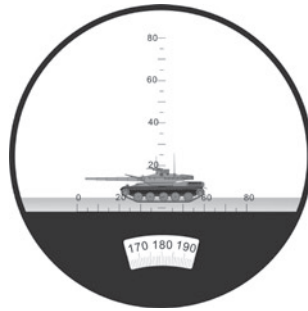


Figure 6. 7x50C and 8x30C Reticle

The 7x50 reticle has horizontal scale and vertical scale, in the below there is measuring reticle according to the known height (see Figure 7). Vertical and horizontal lines on the reticle is in mils as unit. Each small division on both vertical and horizontal lines represents 5 mils and each big division represents 10 mils. You can obtain the azimuth angle, upper and lower angle, distance and height or width etc. by using this reticle. The fast distance measurement is regards as the target as 2 metres high to measure the distance quickly.

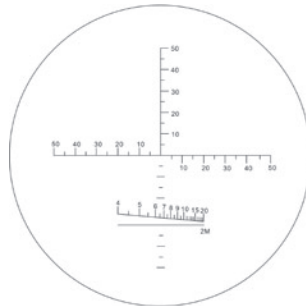


Figure 7. 7x50 Reticle

The 8x36 reticle has horizontal scale and vertical scale, in the below there is measuring reticle according to the known height (see Figure 8). Vertical and horizontal lines on the reticle is in mils as unit. Each small division on both vertical and horizontal lines represents 5 mils and each big division represents 10 mils. You can obtain the azimuth angle, upper and lower angle, distance and height or width etc. by using this reticle. The fast distance measurement is regards as the target as 2 metre high to measure the distance quickly.

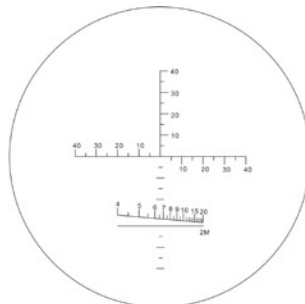


Figure 8. 8x36 Reticle

The 10x42 reticle has horizontal scale and vertical scale (see Figure 9). Vertical and horizontal lines on the reticle is in mils as unit. Reticle uses measurements down to .5 milirad similar to Leopold's Sniper Scope. You can obtain the azimuth angle, upper and lower angle, distance and height or width etc. by using this reticle.

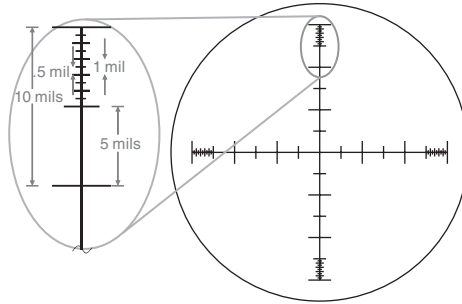


Figure 9. 10x42 Reticle

3.3.2. HOW TO USE THE RETICLE AND CALCULATOR DIAL

NOTE:

The 7x50 reticle is used for example.

1) How to Measure the Horizontal View Angle

The azimuth angles is the angle included between two objects to be measured at the horizontal direction of the binoculars.

A. When the Horizontal View Angle is smaller than the horizontal scale range (-50~+50 mils) inside the binoculars, aim one edge of the object at a horizontal scale line(the center or the outmost line are selected according to the image size of object usually) and read its value. Then read the value of the scale at which another edge was located. Plus this two value, the sum value is the measured Horizontal View Angle. As shown in Figure 10, the Horizontal View Angle of the target (tank) is 20-00 mils, and the Horizontal View Angle is 20 mils.

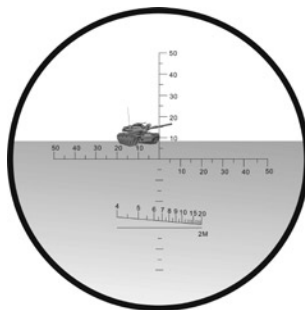


Figure 10. Horizontal View Angle Measuring

B. When the Horizontal View Angle is bigger than the horizontal scale range (-50~+50 mils), an vertical line splits(for example: mast, chimney etc.) on the object can be selected to make the necessary estimated measurements in a step by step fashion. The sum of the value from each step is used to obtain the measured value. As shown in Figure 11, the azimuth of target (cruiser) is 130 mils (60+70=130).

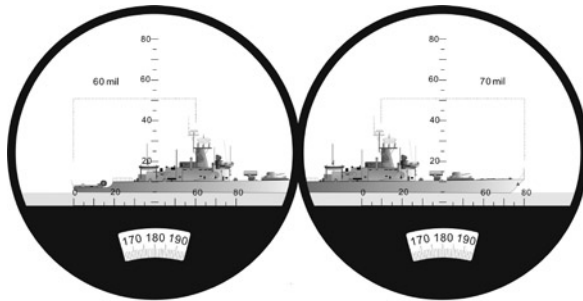


Figure 11. Measuring of Big View Angle

2) How to Measure the Vertical View Angle

Upper and lower angle means the angle included between any two targets (or two ends of the target) against the vertical line on the reticle.

A. Vertical View Angle measurement is similar to measuring the Horizontal View Angle. When the Vertical View Angle measurement is small, aim the cross center of reticle at lower part of the object, read the scale value at the top of the object. If the target vertical angle is a little bigger, you can read the upper scale and the lower scale. As shown in Figure 12, the upper line is 35mils, and the lower line is 40mils, the total vertical angle is 75mils.



Figure 12. Vertical View Angle Measuring

B. When the Vertical View Angle is larger than the vertical scale range (-50 to +50 mils), it can be measured in steps and the angle can be obtained by summing up the value of each step. (The process will be similar to the measurements as mentioned above as horizontal view angle.)

3) How to Use the Reticule to Measure Distance.

The distance measurement of a target can be calculated by using the mil reticule.

The formula of distance measurement: $L(\text{km}) = H(\text{m}) / \omega$

L — the distance between the observer and the object (km)

H — the height of the object (m)

ω — the View angle of the object measured with the reticule of binoculars (mil).

When measure the distance, first, estimate the width or height of the object, then measure the View Angle of the object. According, you can calculate the distance between the observer and the object using the formula.

For example 1:

There is an lighthouse height is 25m ($H = 25\text{m}$).

The Vertical View Angle of the adult is 6 decade mils (60mils).

$$L = H/\omega = 25/60 = 0.4166\text{km} = 416.6\text{m}$$

Therefore: the distance between the observer and the adult is 416.6m.

For example 2:

There is an adult whose height is 1.70m (H = 1.70m).

The Vertical View Angle of the adult is 4 decade mils (40mils).

$$L = H/\omega = 1.7/40 = 0.0425\text{km} = 42.5\text{m}$$

Therefore: the distance between the observer and the adult is 42.5m.

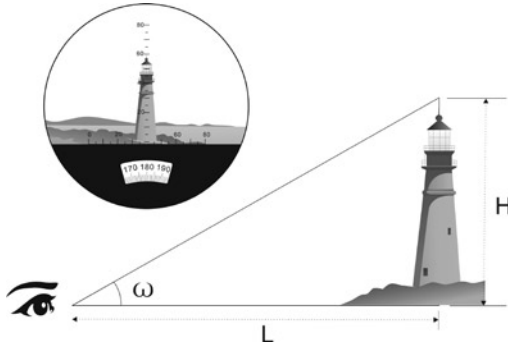


Figure 13. Dintance Measuring

4) How to Measure a Object's Size (Height and Width) Using

According to the formula for distance measurement, you can calculate the height using:

$$H = L \times \omega.$$

When measuring the size, you first estimate the distance to the object, then measure the View Angle. With these measurements, you can calculate the height of the target using the formula.

For example:

the distance is 0.6km between the observer and the object. You can measure that the Horizontal View Angle is 6 decade mils (60mils) and the Vertical View Angle is 3 decade (30mils). So, using the formula you can get:

$$\text{The height: } H = 0.6 \times 30 = 18\text{m}$$

$$\text{The width: } h = 0.6 \times 60 = 36\text{m}$$

5) Quick Distance Measurement

The reticle is consisted of one horizontal line and a diagonal line. And regards the H=2m as known height to quickly measure the common target such as vehicle or adult. Placing the target projection between the 2 lines, The reading on the tangency of the projection and diagonal line is the target distance (line value:100m). as shown in Figure 14, the distance between the target in 2m high and the observer is 550m.

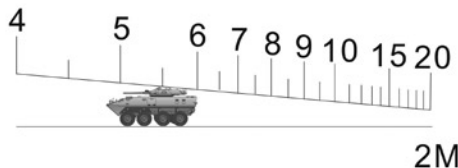


Figure 14. Quick Distance Measurement

NOTE:

Quick distance measurement not present in 7x50C and 10x42 models.

3.6 COMPASS USING (7X50C AND 8X30C ONLY)

Be away from the ferromagnetism material during the working condition. (such as cannon, tanks, battle vehicle, high voltage, transformer substation, ferromagnetic mill, electric & ferromagnetic appliance),otherwise the compass will work in big error or improperly.

In order to ensure the compass working properly and accurately, we divide the global into 5 areas (A. B. C. D. E) according to the international standard. Please choose the right compass before you order.

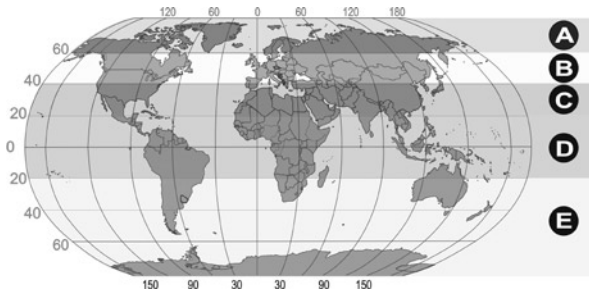


Figure 15. International Standard Areas

A area: the country and area north to 60 degree north latitude, including all the Canada.

B area: the country and area between 40 degree north latitude and 60 degree north latitude.

C area: the country and area between 20 degree north latitude and 40 degree north latitude.

D area: the country and area between 20 degree north latitude and 20 degree south latitude.

E area: Australia, and the country and area south to Angola and Zambia.

The azimuth angle can be measured through the compass built into the right half of the body . It shows the azimuth of the object relative to the observer. Each graduation of the compass equals one degree of angle. When the object lies in the north from you, the compass shows 0(degree) .And it will increase when you turn clockwise. 90°means the object lies in the east from you, 180°means the south and 270°means the west.

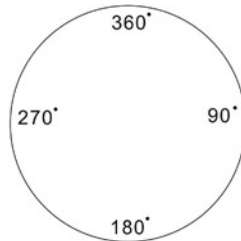


Figure 16. Azimuth Angle

In order to insure precise angle measurements, be away from the ferromagnetism material during the working condition. (such as cannon, tanks, battle vehicle, high voltage, transformer substation, ferromagnetic mill, electric & ferromagnetic appliance),otherwise the compass will work in big error or improperly.

And the binoculars should be kept horizontal and level when reading the compass. The upper and lower angle can not be over $\pm 15^\circ$, The object should lie in the middle of the reticule.

The graduations of the compass need to be illuminated for convenient viewing when there is not sufficient daylight to illuminate the compass dial. Press the illuminator button, the compass scale will be illuminated in red light for easy viewing.

3.7 FOLD-DOWN EYECUPS USING

Armasight Binoculars designed with rubber fold-down eyecups. The fold-down eyecups can help when wearing gas mask or glass.

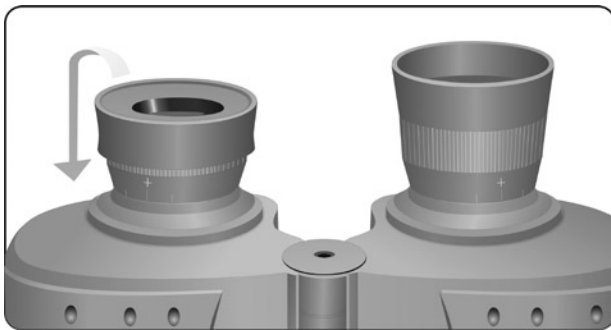


Figure 17. Fold-down Eyecups

3.8 TRIPOD MOUNTING

A standard threaded socket in 1/4 inch for tripod attachment is located at the base of this binoculars shaft. Insert a binoculars tripod adapter, and attach your tripod screw to the base of the adapter.

MAINTENANCE INSTRUCTIONS

4.1 GENERAL MAINTENANCE

Do not touch the lens by hand, be careful to protect the lens not to be injured by hard substance.

Please fold the Interpupillary adjustment in lowness, put on the lens cover and put into the soft bag when you do not use it.

Dust, salt and the oil left from fingerprint smudges should never be allowed to remain on the lenses because they can harm the sensitive multi-coatings applied to the lens surfaces.

Loose dust and debris should be removed by blowing the debris off, using an optical lens cleaning brush or compressed air.

If fingerprints or smudges remain on the lens, use an optical lens tissue and lens cleaner solution to clean the lenses. Follow the instructions on the lens cleaning tissue and cleaner.

Once the lens polluted by oil, please use the soft cotton cloth or silk to clear it with a little industrial alcohol.

4.2 STORAGE

Please put in the dryness place when you do not use it in long time. Suggest to use dryer, and be away from ferromagnetism material.

4.3 SERVICE AND MAINTAIN

Do not take down and maintain yourself when the binoculars can not work properly, please send back to the factory or find the service centre.

4.4 PRODUCT WARRANTY REGISTRATION

In order to validate the warranty on your product, Armasight must receive a completed Product Warranty Registration Card for each unit, or the user must complete warranty registration on our website (www.armsight.com). Please complete the included form and immediately mail it to our Service Center:

Armasight Inc.,
815 Dubuque Avenue
South San Francisco
CA 94080
USA

ARMASIGHT PRODUCT WARRANTY REGISTRATION CARD

PRODUCT INFORMATION

Product Name _____ Purchased From _____
Purchase Date _____ Product Serial # _____

CUSTOMER INFORMATION

Name _____
Address _____
City _____ Country _____ Zip _____
Day Phone # _____ Home Phone # _____
E-mail address _____

.....
Customer Signature Required



Armasight Inc.

815 Dubuque Avenue
South San Francisco
CA 94080, USA

Phone: (650) 589-8181

Fax: (650) 589-8811

Intl Phone/Fax: (650)492-7755

info@armasight.com

CAUTION:

This product contains natural rubber latex which may cause allergic reactions! FDA has noted an increase in the number of deaths reported to the agency that are associated with an apparent sensitivity to natural latex proteins. If you are allergic to latex, it is a good idea to learn which products contain it and strictly avoid exposure.

www.armasight.com