

Army Vision: By 2028: a word-class Army that is source of national pride.

**HEADQUARTERS  
PHILIPPINE ARMY  
OFFICE OF THE ARMY CHIEF QUARTERMASTER  
Fort Andres Bonifacio, Metro Manila**

**PA SPECIFICATION**

**QM SPEC NR IE-22MBCM1**

**AUG 07 2017**

**(Interim)**

**MILITARY BINOCULAR, COMPACT  
PHILIPPINE ARMY, MODEL 1**

**1. GENERAL**

1.1 Scope - This specification covers Binoculars for use of military personnel of the Philippine Army. This Binocular is well suited for observation or as a general purpose model with a military scale reticle.

1.2 Grade - The finished Binoculars shall conform to the best quality and grade of product prescribed by this specification.

**2. REQUIREMENTS**

2.1 First Article – One (1) sample of Binoculars shall be submitted to the Office of the Army Chief Quartermaster and shall be subjected to first article inspection in accordance with para 3.1.

**2.2 Materials**

2.2.1 Materials - The housing or chassis materials shall be fabricated with Polycarbonate, Magnesium alloy or Aluminum alloy. The housing shall have a protective robust NBR (Nitrile Butadiene Rubber) armor coating for durability, slip-proof and protection against the hardest environmental conditions.

2.2.2 Design – The Binocular shall be in compact design which is lightweight and shifts the center of gravity into the palms for comfortable and long-time observation but weight and dimension shall be in accordance as prescribed in this specification. It shall have 8x magnification and 30 to 42 objective lens diameter.

**2.3 Operating requirements**

2.3.1 Field of View at 1,000 meters shall be 340 feet (104 meters) (minimum).

2.3.2 The Binocular shall have an Exit Pupil Diameter of not less than 3.0 mm.

2.3.3 Eye Relief Distance shall be ranging from 11mm to 21mm to provide adequate field of view to users wearing eyeglasses and shall have more comfort on observation.

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**2.4 Mechanical Requirements**

2.4.1 Focusing system of the Binocular shall be Central Focus with a diopter adjustment in the right eyepiece or an Individual focusing system in the ocular lens.

2.4.2 The Binocular shall have a Diopter adjustment for focusing adjustment that shall compensate vision difference.

2.4.3 Eyecups – the binocular shall be a Twist-up eyecup or folded down eyecups made of silicone with ergonomic design that provides optimum protection against incidental light from the side to block troublesome reflections and ensure an extremely bright image. It shall have fine adjustment mechanism that can be adjusted to fit exactly to the eyes.

2.4.4 Interpupillary Distance (IPD) – The Binocular shall have a hinge system between two barrels allowing the eyecups and the ocular lenses closer or further apart for adjustment of Interpupillary Distance.

**2.5 Optical Requirements**

2.5.1 Prism – the binocular shall have a high quality Porro prism using glass type of BAK – 4 which provides higher glass density. It shall have a higher refractive index rate of not less than 1.55 and a complete circular shape of the exit pupil. It shall provide brighter, color rich and sharper edges of the periphery. The user shall not experience eyestrain and headaches on prolong use of the binocular.

2.5.2 Optical Coatings – the lenses and glass (prism) shall be applied of fully Multi-Coated anti-reflections coating both inner and outer surfaces of the lenses. It shall provide vivid, brighter and sharper images. The images shall show no sign of "ghost images" of bright objects, dim picture, washed-out image and poor observing experience.

**2.6 Environmental Requirements**

2.6.1 Shockproofness – The entire binocular shall be of such construction as to withstand the shocks and jars to which it will be subjected in service, with derangement of any of the parts or impairment of its adjustments beyond specified limits. The binoculars shall withstand the shock test without damage or without disturbing the collimation beyond specified limits.



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2.6.2 Waterproof – the binoculars shall be sealed with O-rings to prevent moisture from getting inside. The complete binocular shall be capable of being submerged into water at certain depth in specified time limits where it will not damage or adversely affect performance of the binocular directly or indirectly.

2.6.3 Fog proof – the binocular shall be sealed with O-ring and purged with nitrogen or argon gas to prevent from internal fogging. It shall show no sign of fogging on the lens after a complete immersion in water.

2.6.4 Low and High Temperature – the binocular shall show no sign of glass breakage or other physical failure and shall meet all requirements after having been exposed to a required minimum low temperature and a minimum required high temperature. It shall deliver consistently sharp, clear and fog-free images after exposure on the required temperature.

2.6.5 Corrosion Resistant – the binocular shall show no evidence of corrosion that will damage or adversely affect performance of the binocular directly or indirectly after undergoing a simulated seawater environment prescribed in the test procedure.

## 2.7 Size Requirements

2.6.1 Dimension and Weight – the dimension of the binocular shall be  $11.5 \pm 1.5$  cm high X  $17.5 \pm 1.5$  cm wide X  $6.5 \pm 1.5$  cm long(depth). Its weight shall not be more than 680 grams excluding accessories and attachments.

## 2.8 Accessories

2.8.1 Carrying Case – Each binocular shall be provided with an olive drab green soft carrying case. Defects which affect serviceability and appearance shall not be permitted. It shall be made from nylon canvas type of material and un-padded strap made of polyester webbing with sliding shoulder pad for added comfort and can be adjusted for length with the buckles. The back side of the case shall have a loop that enables the case to attach to the hip by threading in the belt for preference of the user.

2.8.1.1 The lid that folds over the top of the case is closed with a plastic quick release buckle which can be adjusted for length and when closed is secure. It shall have a single elasticated pocket for placement of few small items as well as cleaning cloth. The binocular shall fit perfectly to the bag and shall be easy to close the lid with all lens cover attached to the binocular.

2.8.2 Rain Guards – The binocular shall have a soft rubber rain guard that has flexible bridge in between the two cups which takes up the slack when you close or open the central pivot on the bins which can fix to the eyecups regardless of the IPD setting. It shall have two loops (one on each cup) for attachment to the neck strap.

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2.8.3 Lens Cover – the binocular shall have soft rubber or plastic objective lens cover on tethered caps that loops over the objective end of the tubular barrel or attached to the central pivot of a binocular that allows the caps to hang when it is taken off and no worry about losing it.

2.8.4 Neck Strap/harness – the binocular shall have well-padded neck strap made of nylon or polyester webbing and a neck strap attachment. The strap shall have slider plastic buckle that enables to adjust the length of the strap and it shall be attach/connect to the binocular by a quick release buckle. The color shall be similar to the exterior body of the binocular.

2.8.5 Cleaning Kit – the binocular shall be provided with a cleaning kit consist with a minimum of Lens cleaning brush, lens cleaning solution and a microfiber cleaning cloth.

2.8.6 Instruction Manual and Warranty Information – the manual shall contain all the basic information/instruction needed, which includes but not limited to the parts of the binocular, instruction for use, setting the diopter, focusing, eyecup adjustment, cleaning as well as care and storage.

2.9 Special Features – the binocular shall have a minimum additional feature as follows:

2.9.1 Mil-dot Reticle – the binocular shall include a built-in horizontal and vertical scale reticle graduated in mil increment unit marking in accordance to manufacturer's standard.

**2.10 Construction and Design**

2.10.1 The housing style or design of the binocular shall be compact, lightweight, ergonomic design, well balanced and comfortable to hold for a longer period of observation. It shall consist of two optical systems that are connected by a hinge sharing a common focus system. The image shall be projected simultaneously by both eyes providing a realistic perception of depth. It shall conform to the dimension, weight and performance specified in this specification.

2.10.2 The external housing shall be cover with rubber armoring with a basic material specified in this specification that protects the entire exterior. It shall be olive drab in color and less reflective. It shall have an average thickness and hardness that can withstand a reasonable amount of impact protection and a good level of protection against sharp edges and the like. The objective lens shall be well protected by a protruding body that shield from potential scratching, rain and dust.

2.10.3 The Binocular shall have serial number that is permanent and visible on the item.



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2.10.3 Hinges – the hinges of the binoculars shall be so designed as to permit the adjustment of the interocular distance. The hinge shall be fitted and adjusted with sufficient tightness, and the hinge lubricant shall be of such consistency that the interpupillary distance shall be maintained. The hinge lugs shall be integral with their respective body tubes.

2.10.4 Eyepiece – the eyepiece shall be of rotating focusing type. It shall be capable of being focused independently. There shall be a knurled strip around the circumference of the eyepiece with a graduation for the zero position. The index shall be fixed, and the scale shall be on the rotating part.

2.10.5 Focusing System – the focus system shall be adjusted only once to each user. Once adjusted to individual acuity, it shall easily observe all objects from a distance of 20 meters to infinity with high contrast and sharpness right to the edge.

### 2.11 Workmanship

2.11.1 The Binoculars shall be well-finished, well cleaned and free from any defects which may affect the serviceability, appearance of the finished item. It shall provide a good level of contrast between dark and light. It shall not yield color fringing and washed out picture during observation.

2.11.2 The Binocular shall be free from any foreign particle or dust particularly the inside part that may affect the observation of the user.

## 3. VERIFICATION

3.1 First Article Inspection – The contractor shall furnish one (1) sample of the Binoculars for first article inspection. The sample shall be subjected to test and examination to verify if the requirements in para 2.2 through 2.11 are satisfied with reference to the attached test parameters and specification for this documents.

## 4. QUALITY ASSURANCE PROVISION

4.1 Responsibility for Inspection – Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the government. The government reserves the right to perform any of the inspections set forth in the specifications which are deemed necessary to assure that supplies and services conform to prescribed requirements.

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4.2 Responsibility for Compliance – All items must meet all the requirements of sections 2 & 3. The inspections set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the government for acceptance comply with all the requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material either indicated or actual, nor does it commit the government of defective material.

4.3 Bid Samples – One bid sample of Binocular shall be submitted to the committee when deemed necessary to determine the extent of compliance with the specification insofar as quality of materials used is concerned. The representatives of the procuring entity/end-users shall determine the extent of compliance with the specification insofar as workmanship, style and finish are concerned.

**5. PACKAGING AND PACKING**

5.1 Packaging – Each Binocular together with the carrying case and accessories shall be packed in a carton box with information label of the manufacturer and essential information or description about the item.

5.2 Packing – The boxes of binocular shall be place in corrugated carton or container properly sealed and shall be label as follows:

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Name of Contractor: \_\_\_\_\_

Number of pieces: \_\_\_\_\_

**6. MISCELLANEOUS**

6.1 The contractor/manufacturer shall notify the procuring entity or the authorize committee in a reasonable time before actual production starts so that PA inspectors can be assigned to oversee the process of manufacture to be followed and to inspect the quality of materials to be used when deemed necessary.


6.2 Any point not covered by the text shall be governed by additional or supplemental requirements or evaluation indicated in the contract.




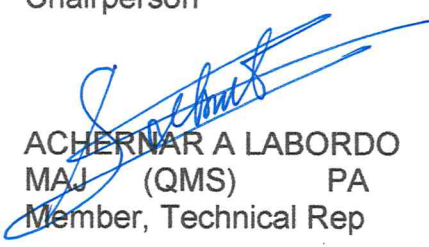
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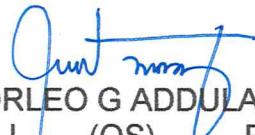
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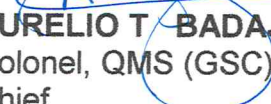
  
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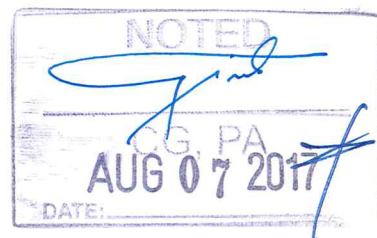
  
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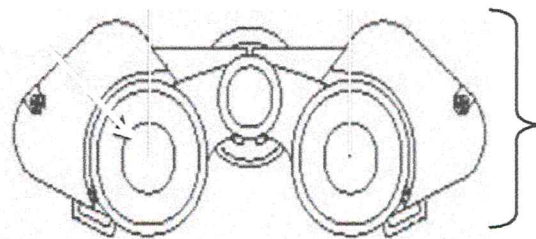
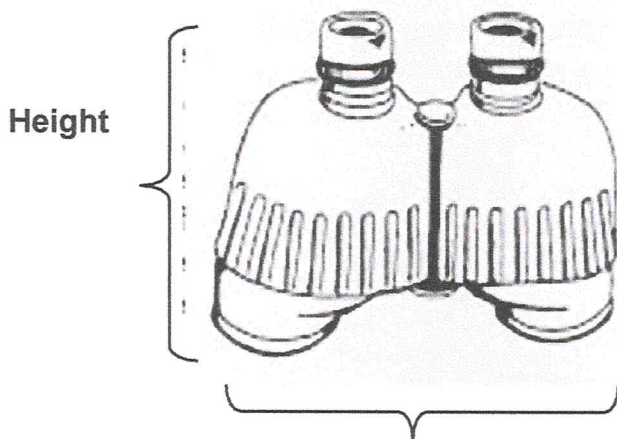
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**NOTE: All images in this Specification are for illustration purposes only. It does not depict the actual design or housing style of a binocular.**

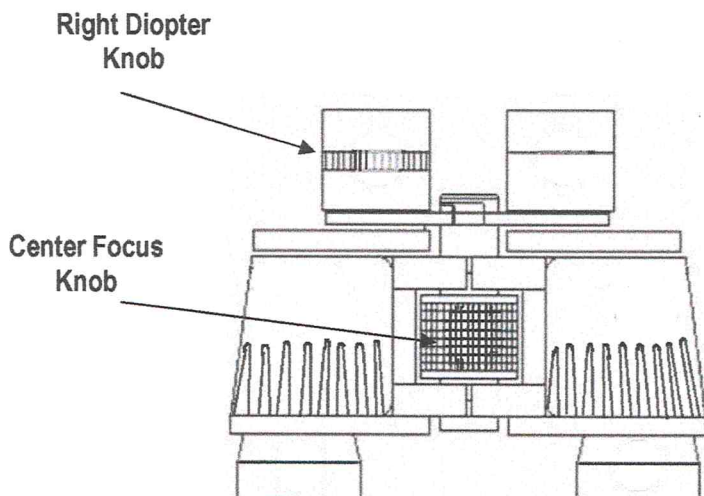
### Dimension of the Binocular: (HxWxL)

(11.5 ± 1.5 cm high X 17.5 ± 1.5 cm wide X 6.5 ± 1.5 cm long)

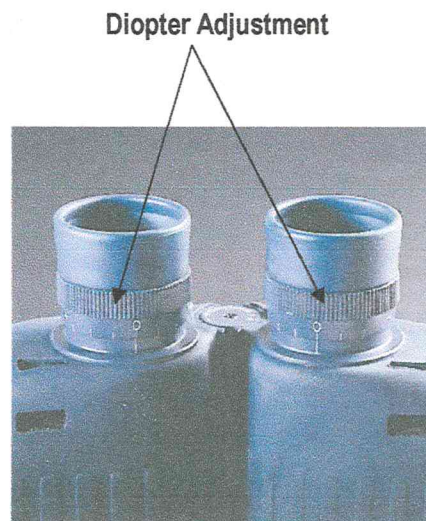


Length

Width



Central Focus System



Individual Focus System



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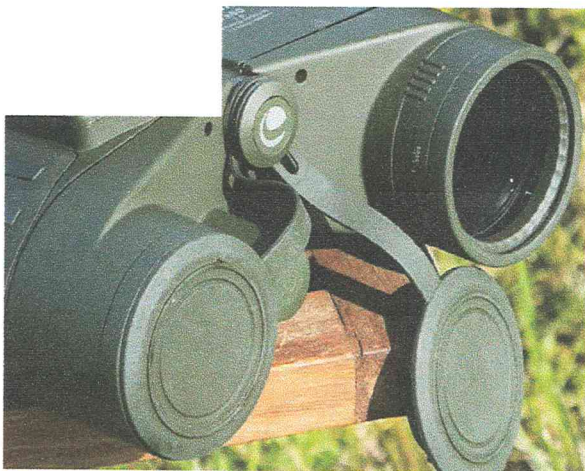
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Rain Guard



Objective Lens Cover

