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**HEADQUARTERS  
PHILIPPINE ARMY  
TECHNICAL WORKING GROUP FOR QUARTERMASTER ITEMS  
OFFICE OF THE ARMY QUARTERMASTER  
Fort Andres Bonifacio, Metro Manila**

**TECHNICAL EVALUATION ON THE SUBMITTED SAMPLE**

**PROJECT: Supply and Delivery of Brand New 2,031 pcs Military Binocular, Compact, Model 1 for the Philippine Army**  
**SCB: Caballo/Focusoptech**  
**Number of Samples: One (1) set of Binocular**

**PHYSICAL INSPECTION CHECKLIST**

**Note: The inspection will only covers those parameters that can be inspected physically. Other parameters that cannot be evaluated physically and requires laboratory equipment will be indicated as N/C (Not Conducted).**

<b>PARAMETERS</b>	<b>MINIMUM REQUIREMENTS</b>	<b>FINDINGS</b>	<b>REMARKS</b>
<b>Material</b>	The housing or chassis materials shall be fabricated with Polycarbonate, Magnesium alloy or Aluminum alloy	N/C	N/A
Coating	It shall have a protective robust NBR (Nitrile Butadiene Rubber) armor coating.	N/C	N/A
Color	Olive Drab	Olive Drab	Comply
<b>Operating Requirements</b>			
Magnification	8x	8x	Comply
Objective Lens Diameter, mm	30 to 42	30	Comply
Field of View at 1,000 meters	340 ft (104 meters) minimum	140 mtrs	Comply
Exit Pupil diameter ,mm	3.0 (minimum)	3.75 mm	Comply
Eye relief Distance	11mm to 21mm	14 mm	Comply
	It shall provide adequate field of view to users wearing eyeglasses and shall have more comfort on observation.	It has adequate Field of View to users wearing eyeglasses	Comply
<b>Mechanical Requirements</b>			
Focusing System	Focusing system of the Binocular shall be Central Focus or an Individual focusing system in the ocular lens.	Individual Focusing system	Comply
Diopter Adjustment	The Binocular shall have a Diopter adjustment for focusing adjustment	It has two (2) Diopters for focusing adjustment	Comply
Eyecups	The binocular shall be a Twist-up eyecup or folded down eyecups.	It has folded down Eyecups	Comply
	It shall be made of silicone with ergonomic design	Made of silicone	Comply

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<b>PARAMETERS</b>	<b>MINIMUM REQUIREMENTS</b>	<b>FINDINGS</b>	<b>REMARKS</b>
Interpupillary Distance (IPD)	It shall have a hinge system between two barrels allowing the eyecups and the ocular lenses closer or further apart.	It has hinge system for adjustment of eyecups and ocular lenses. The IPD ranges from 54 mm to 74 mm	Comply
<b>Optical Requirements</b>	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.	The binocular provides brighter color and excellent images without experiencing eyestrain	Comply
	It shall have a complete circular shape of the exit pupil	Exit pupils has circular shape	Comply
Prism	Porro	Porro	Comply
Glass type	BAK – 4	BAK – 4	Comply
Refractive Index	1.55 (minimum)	BAK – 4 is equivalent to 1.5688	Comply
<b>Optical Coatings</b>	Shall be fully-multi coated anti-reflections coating both inner and outer surfaces of the lenses	Fully multi-coated	Comply
	It shall provide vivid, brighter and sharper images.	It provides a brighter and sharper image	Comply
	The images shall show no sign of “ghost images” of bright objects, dim picture, washed-out image and poor observing experience.	The binocular has a clear image and observing experience	Comply
<b>Environmental Requirements</b>			
Shockproofness	Shall withstand the shocks and jars without damage, no derangement of any of the parts and functions and impairment of its adjustments beyond acceptable limits.	N/C	N/A
Waterproof	The 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	N/C	N/A
Fogproof	It shall be sealed with O-ring and purged with nitrogen or argon gas	N/C	N/A
	It shall show no sign of fogging on the lens after a complete immersion in water.	N/C	N/A
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.	N/C	N/A
	It shall deliver consistently sharp, clear and fog-free images after exposure on the required temperature.	N/C	N/A

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<b>PARAMETERS</b>	<b>MINIMUM REQUIREMENTS</b>	<b>FINDINGS</b>	<b>REMARKS</b>
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.	N/C	N/A
<b>Size Requirements</b>			
Dimension (H x W x L)	11.5 ± 1.5 cm x 17.5 ± 1.5 cm x 6.5 ± 1.5 cm	10 cm x 17.0 cm x 6.5 cm	Comply
Weight, g	680 (maximum)	680 g	Comply
<b>Accessories</b>			
Carrying Case	It shall be provided with an olive drab soft carrying case	Olive Drab soft Carrying case	Comply
	It shall have sliding shoulder pad 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	It has an adjustable shoulder pad and a belt loop on the back side of the case.	Comply
	The lid that folds over the top of the case is closed with a plastic quick release buckle which can be adjusted for length.	The lock of the case is closed with a quick release buckle	Comply
	It shall have a single elasticated pocket as placement of few small items.	It has pocket inside the soft case for placement of small items	Comply
	The binocular shall fit perfectly to the bag and shall be easy to close the lid with all lens cover attached to the binocular.	The binocular fits to the bag	Comply
Rain Guards	The binocular shall have a soft rubber rain guard as cover of the ocular lens	The binocular has soft rubber rain guards	Comply
	The rain guard shall have flexible bridge in between the two cups which takes up the slack and can fix to the eyecups regardless of the IPD setting	The rain guards has flexible bridge between two cups	Comply
	It shall have two loops (one on each cup) for attachment to the neck strap.	The rain guard is attached to the neck strap with a loop	Comply
Lens Cover	The binocular shall have objective lens cover	With objective lens cover	Comply
	It shall be 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.	Lens cover attached to the central pivot of a binocular	Comply

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<b>PARAMETERS</b>	<b>MINIMUM REQUIREMENTS</b>	<b>FINDINGS</b>	<b>REMARKS</b>
Neck Strap/Harness	Shall have a neck strap/harness attachment.	The binocular has neck strap/harness	Comply
	The strap shall have slider plastic buckle that enables to adjust the length of the strap.	The strap has a slider plastic buckle	Comply
	It shall be attach/connect to the binocular by a quick release buckle.	The neck strap is attached to a binocular by a quick release buckle	Comply
	The color shall be similar to the exterior body of the binocular.	The neck strap is Olive Drab	Comply
Cleaning Kit	The binocular shall be provided with a cleaning kit.	With cleaning kit	Comply
	The cleaning kit shall consist with a minimum of lens cleaning brush, lens cleaning solution and a microfiber cleaning cloth.	Cleaning kit consist of Anti-fog liquid, cotton swab, lens cloth, brush & blower	Comply
Instructions and Warranty Information	Shall have an Instruction and warranty information	With Instructional Manual and warranty. However, the brand indicated in the manual is <b>SM 30</b> while the model of the sample submitted is <b>"FOCUS OPTECH BN830"</b> .	<b>Failed</b>
	The manual shall contain all the basic information/instruction needed, which includes but not limited to the parts of the binocular, instructions for use, setting the diopter, focusing, eyecup adjustment, cleaning as well as care and storage.	The manual is in English language with complete/information as specified.	Comply
<b>Special Features</b>			
Mil-dot Reticle	The binocular shall include a built-in horizontal and vertical scale reticle.	With military dot reticle, however, the military dot reticle should always be perpendicular to the ground observation even if the two eyepieces of the binocular lenses are adjusted. This particular binocular has a fixed Mil-dot reticle and is not a standard for a binocular	<b>Failed</b>

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<b>PARAMETERS</b>	<b>MINIMUM REQUIREMENTS</b>	<b>FINDINGS</b>	<b>REMARKS</b>
<b>Construction and Design</b>			
	The objective lens shall be well protected by a protruding body that shield from potential scratching, rain and dust.	The objective lens has protruding body	Comply
Serial Number	The binocular shall have serial number that is permanent and visible on the item.	serial number: 168277	Comply
Hinges	The hinges of the binoculars shall be so designed as to permit the adjustment of the interocular distance.	The hinges of binocular is adjustable to the interocular distance	Comply
	It 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 hinges has sufficient tightness that maintains the position of IPD	Comply
Eyepiece	Shall be of rotating focusing type and shall be capable of being focused independently.	The eyepiece has rotating focusing type on each ocular lens	Comply
Focusing system	The focus system shall be adjusted only once to each user's individual acuity.	The focus system can be adjusted only once to each user's acuity	Comply
<b>Workmanship</b>	Shall be well-finished, well cleaned and free from any defects which may affect the serviceability, appearance of the finished item	The binocular has a good workmanship	Comply
	The binocular shall be free from foreign particle or dust on the inside part of the binocular that affect the observation of the user.	The binocular has no foreign particle inside the lens	Comply

**MAJ ACHERNAR A LABORDO (QMS) PA**  
**Technical, PATWG for QMS items**

**COL RICHARD T RUFFY GSC (QMS) PA**  
**Chairperson, PATWG for QMS Items**

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