EXHIBIT A

CONTRACT DATA REQUIREMENTS LIST
DD FORM 1423 (MECHANIZED)
CATEGORY: MISC SYSTEM/ITEM: M22&M24 BINOCULARS
TO CONTRACT/PR: P10SRA01,02

1. SEQUENCE NUMBER
2. TITLE OF DATA ITEM
3. SUBTITLE
4. DATA ITEM NUMBER
5. CONTRACT REFERENCE
6. TECHNICAL OFFICE 7. DD 250 8. APP CODE 9. DIST STATEMENT REQUIRED
10. FREQUENCY 11. AS OF DATE 15. TOTAL:
12. DATE OF 1ST SUBMISSION 13. DATE OF SUBSEQUENT SUBMISSION
16. REMARKS

14. DISTRIBUTION | DRFT/REG/REPRO COPIES

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1. A001
2. SPECIAL INSPECTION EQUIPMENT DESCRIPTIVE DOC.
3. AIE DESIGN DOCUMENTATION
4. DI-QCIC-81006*
5. SECTION E
6. AMSTA-AR-QA 7. XX 8. A 9. N/A
10. ONE/R 11.N/A
12. ** 13.WHEN REV.
16. REMARKS

14.	
AMSTA-AR-QAC-F	(1) / 1/
(D)	/ /
QAR	/ /
CO (LT ONLY)	/ /
AMSTA-AR-QAW-C	(2) / /
(LT ONLY) (R)	/ /

15. TOTAL 0/ 1/ 0

* BLOCK 4: DO NOT ADDRESS PARAGRAPHS 10.1, 10.2, 10.4.1(f) AND 10.4.2. IGNORE ALL REFERENCE TO THE WORD "SPECIAL" IN DID. SUBMIT FOR ALL CRITICAL, SPECIAL, MAJOR, AND MINOR CHARACTERISTICS IN SPECIFICAITON OR QAP, INCLUDING INSPECTION PROCEDURES OR WORK INSTRUCTIONS USED WITH THE INSPECTION EQUIPMENT.

** BLOCK 12: SUBMIT 30 DAYS PRIOR TO FA,OR PRODUCTION,IF FA IS WAIVED. THE GOVERNMENT WILL RESPOND WITHIN 30 DAYS OF RECEIPT OF ORIGINALS AND REVISIONS.REVISIONS ARE TO BE SUBMITTED WITHIN 10 DAYS OF RECEIPT OF GOVERNMENT RESPONSE. IF DOCUMENTATION WAS APPROVED ON PRIOR CONTRACT AND NO CHANGES WERE MADE,SUBMIT ONLY EVIDENCE OF PRIOR APPROVALS.
email: (1)aie-qac@pica.army.mil (2)amsta-ar-qa-cdrl@ria-emh2.army.mil
Text:Microsoft Office 97
Drawings:AutoCAD-Release 14(Expressed mailed hard copies will be accepted)
Files may be compressed using ZIP program.
WARNING: Large packages may cause delays in delivery using mail internet.
Email subject line must contain end item nomenclature.

APPROVED BY: STEPHEN J HANSEN, SDMO, AMSTA-AR-QAD DATE: 02/12/2001

ATTACHMENT 001
DAAE20-00-R-0062

PRF 9394727
CAGE Code: 19200
AMSTA-AR-QAT-F
31 October 2000

PERFORMANCE SPECIFICATION

FOR THE

M22 (7X50) BINOCULAR

U.S. Army TACOM-ARDEC
Picatinny Arsenal, NJ 07806-5000

Prepared by
TACOM-ARDEC Quality Engineering Directorate
Direct Fire/Fire Control Team AMSTA-AR-QAT-F

FSC: 1240

1. SCOPE

1.1. Scope. This specification covers the M22 (7 X 50) Army binocular. The binocular includes: a reticle, and two laser eye protection filters.

2. APPLICABLE DOCUMENTS.

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all requirements documents cited in sections 3 and 4 of this specification, whether or not documents are listed.

2.2 Government documents:

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form of the exact revision listed below form a part of this specification to the extent specified herein.

SPECIFICATIONS

DEPARTMENT OF DEFENSE

MIL-PRF-131 J	Barrier Materials, Water Vapor Proof, Grease Proof Flexible Heat Seal.
MIL-STD-129 N	Military Marking
MIL-STD-1916	DOD Preferred Methods for Acceptance of Product
MIL-PRF-13830B	Optical Components for Fire Control Instruments; General Specification Governing The Manufacture, Assembly, and Inspection

STANDARDS

FED-STD-595	Colors used in Government Procurement

(Unless otherwise indicated, copies of the above specification, standards, and drawings, and handbooks are available from the Standardization Document Order Desk, 700 Robins Avenue, Bldg. 4D, Philadelphia, PA 1911-5094. Other information about current standards is available at the following Internet address: http: / / www.dodssp.daps.mil / dodssp.htm)

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publication of the exact revision listed below form a part of this specification to the extent specified herein.

DOCUMENTS (See 6.7)

US ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER (ARDEC)

Purchase Description 18360 Laser Protection Filter for the M22 & M24 Mini Binocular, dated 29 Feb. 2000, Classified Secret.

(Copies of other Government documents, drawings and publications required by contractors in connection with specific acquisition functions should be obtained from U.S. Army TACOM-ARDEC, AMSTA-AR-QAW, Picatinny Arsenal, NJ 07806-5000)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Design verification. When specified in the contract (see 6.2), three (3) samples of the M22 Army Binoculars shall be subjected to design verification in accordance with 4.2.

3.2 First article. When specified in the contract (see 6.2), samples shall be subjected to first article inspection in accordance with 4.3.

3.3 Interface and interoperability requirements: All requirements stated herein are with the Anti-reflection Devices (ARDs) removed.

3.3.1 Magnification. Magnification of each prism telescope of the binocular shall be equal to or between 6.8 and 7.2 power. Magnification differences of the two barrels shall not exceed 2%.

3.3.2 Exit pupils. Diameter of exit pupil shall be between 6.9 and 7.3 millimeters.

3.3.3 Field of view. The minimum field of view at 1000 meters shall be 128 meters.

3.3.4 Weight. The maximum weight with strap and lens caps shall not exceed 1.6 kilograms.

3.3.5 External covering. The external surfaces of the binocular bodies shall be non-reflective and have a non-slip covering with a matte surface, designed to prevent slipping while in the users hands. The covering shall also serve to protect the binoculars from minor bumps, shocks, and abrasion.

3.3.6 Eyecups, eye lens covers, and objective lens covers. The M22 binocular shall be provided with eyecups, which shall be foldable. The binocular shall also be provided with covers for the objective and eye lenses. These components shall be made of tear-resistant material. The eye lens covers shall be attached to the binocular or the carrying strap in such a way as to allow binocular operation and prevent loss of the covers when removed from the lenses. The objective lens covers shall be attached to the binocular center hinge bolt by straps or extensions of the cover material so that the covers will fall below the field of view when the binocular is in use. The cups and covers shall be interchangeable among M22 binoculars.

3.3.7 Carrying strap. The binocular shall be equipped with a carrying strap between 0.9 cm and 1.3 cm. wide. The strap shall be between 97 and 112 cm in length. The strap shall be firmly attached to the binocular body and shall be detachable for replacement. The carrying strap shall be of a material with high strength/stress reinforcement and shall be capable of supporting the binocular weight during normal use. The strap shall be capable of supporting a 9 ±1 kilogram weight. Carrying strap and connectors should be non-reflective. Color shall match that of binocular (see 3.4.1).

3.3.8 Maintainability. Binocular shall be designed for ease of replacement of the following external replaceable parts. Figure 1. is an outline drawing of generic M22 Binocular showing replaceable external parts.

ITEM NO.	QUANTITY PER BINOCULAR	ITEM DESCRIPTION
1	1	Strap Assembly
2	1	Cover, Eye Lens
3	2	Cover, Objective Lens
4	2	Eye Cup, Fold Down

3.3.9 Anti-reflection Device (ARD). Each objective assembly of the binocular must interface with either ARD (See 6.10) currently within the army stockpile system per NSN 6650-01-456-9093 or NSN 6650-01-456-4527.

3.3.10 Operability. The ARD shall be able to be attached and detached without the use of tools (fingers only) and shall take no more than 30 seconds per system to attach and remove after two hours at each of the following temperatures: minus 25 ° C, room temperature and plus 49 ° C.

3.4 Support & Ownership.

3.4.1 Binocular Color. The binocular shall be predominantly one basic color: black, color No 37030, green, color No 34094, or field drab, color No 33105 per Fed-Std-595.

3.5 Operating requirements.

3.5.1 Interpupillary torque. The interpupillary running torque values shall be between 3.46 to 25.3 kg-cm (3 to 22 in-lb) at each of the following temperatures: room temperature: minus 25 ° C and; plus 49 ° C.

3.5.1.1 Interpupillary adjustment. The binocular must have an interpupillary distance scale which covers a minimum range of 58 to 72 millimeters (2.28 to 2.83 in) Graduation shall be provided and shall be suitable for the intended purpose. Marked settings shall be accurate within ± 1 millimeter of true position.

3.5.2 Ocular. Each ocular of the Binocular shall contain a laser eye protection filter array per Purchase Description 18360 (secret document). All requirements of the document shall be met.

3.5.2.1 Filter masking. The laser protection filter shall be mounted on the image side of the objective lens such that no laser energy can pass through the filter outside its clear aperture.

3.5.2.2 Beam size. The beam or spot diameter at the filter location shall not be less than 0.7 mm when a collimated 1.0 mm diameter beam is projected on to the objective lens.

3.5.2.3 Filter mounting. The laser eye protection filter array may be used in parallel or non-parallel light provided that the angle of the extreme ray does not exceed twelve degrees.

3.5.3 Anti-reflection coatings. All optical elements shall be anti-reflection coated in accordance with the requirements of MIL-PRF-13830.

3.5.4 Collimation. The binocular collimation shall be within the following range for any interpupillary setting, at the zero diopter setting.

Divergence	40 minutes of arc max.
Dipvergence (from horizontal)	30 minutes of arc max.
Convergence	3 minutes of arc max.

3.5.5 Clear eye distance. The clear eye distance of the binocular shall be a minimum of 9 millimeters (0.35 in) and maximum of 22 millimeters (0.87 in).

3.5.6 Resolution. Not greater than 9 seconds of arc, when measured at the center of the field of view. Horizontal and vertical lines shall be resolved within 0.5 diopter.

3.5.7 Image tilt. The images of an infinity plumb line formed by the two optical systems shall be parallel to each other within one degree of arc. Neither image shall vary from the vertical by more than one degree of arc.

3.5.8 Eyepiece focus. Individual eyepiece focus is required. The individual eyepieces shall be adjustable through a true range of ± 4 diopters. The individual diopter scales shall be graduated through a minimum range of ± 4 diopters. Markings shall be provided every diopter. Markings shall be accurate within ± 0.25 diopter.

3.6 Reticle presence. The binocular shall have a reticle as described by Figure 2. per the following.

3.6.1 Reticle location. The reticle shall be contained in the left eye ocular and shall be centered in the field of view.

3.6.2 Cover plate. The reticle shall be a two piece cemented type consisting of a reticle and a cover plate. The cover plate shall have a thickness of 0.25 cm ± .025 cm., (see 6.13).

3.6.3 Index match & scale The cover glass and reticle glass shall be from the same glass melt. The index of refraction of the cement used shall match the indices of the glass within ± 0.001. External surfaces shall have a surface quality of 20-10 or better. The back surface (air to glass) of the reticle and the air to glass surface of the cover

glass shall have an anti-reflection coating. The surface quality at the reticle surface of both pieces shall be 10-5. The horizontal reticle line is to cover a total range of at least 100 meters at 1000 meters distance. The scale shall be etched with graduations depicting 5 meter increments at 1000 meters. The reticle shall contain a vertical scale, which is centered along the horizontal line. The vertical scale shall cover a total range of at least 100 meters at 1000 meters distance with 30 meters at 1000 meters distance below the horizontal line and shall be graduated so as to depict 5-meter increments at 1000 meters distance.

3.6.4 Position. The horizontal reticle line shall be parallel to a line joining the centers of the right and left objective at an interpupillary distance setting of 63 ± 1 millimeter. The reticle shall be of such a design that the user can readily identify the 10-meter graduations from the center of the scale. The reticle shall be otherwise suitable for its intended purpose.

3.6.5 Parallax. Parallax, when measured at the center of the field, shall not exceed 1.0 mil when measured at the center of the reticle.

3.7 Cleanliness and optical quality. Binoculars shall be designed and constructed to provide a clear image, free of flare from non-optical surfaces. The optical parts and entire interior of the binocular shall be clean and free from dirt, dust, grease and other foreign matter. There shall be no specks of dirt obvious to the unaided eye, which would impair optical performance when looking into the binocular eyepiece against a background having the brightness of the sky in average daylight. The binocular interior shall be free from lubricants and coatings, which may bleed, outgas, chip or flake.

3.8 Environmental requirements. The binocular shall be capable of withstanding the following environments without physical damage or degradation of optical characteristics.

3.8.1 Shock. The binocular shall withstand a total of 12 shocks. Each impulse shall be 40± 4"Gs", half sine with a time duration of 11±1 millisecond.

3.8.2 Drop. The ARD shall remain attached to the binocular when dropped three times from a height of five feet.

3.8.3 Vibration. The binocular shall withstand vibration at a constant frequency of 30 cycles per second with an amplitude of 0.16 cm or 0.32 cm total excursion (1/16 inch or 1/8 inch).

3.8.4 Temperature. The binoculars shall withstand temperatures of -40 °C and +70 ° C (-40 ° F and +158 ° F) without damage or internal fogging.

3.8.4.1 Eyepiece. The eyepiece diopter scale shall withstand and operate freely within the range of temperature from -40 ° C to +49 ° C (-40 ° F to +120.2 ° F).

3.8.5 Humidity. The binocular shall show no sign of moisture intrusion or internal fogging after exposure of 24.0 ± .25 hours at a relative humidity of 94 ± 5% from 20 ± 2.5 ° C (68 ° F) to +49 ° C (120 ° F).

3.8.6 Water tightness. Binocular shall remain watertight while withstanding immersion in one meter of ambient temperature water for a sixty-minute period.

3.9 Ozone depleting substances (ODS). The production process of the M22 binocular and the subsequent end product and by-products shall not generate or contain any government listed ODSs.

3.10 Hazardous materials. The production process of the M22 binocular and the subsequent by products shall not generate or contain any government listed Hazardous Materials.

3.11 Workmanship. All components shall be free of chips, dirt, grit, or other foreign material. The cleaning methods used shall not damage any assembly or parts nor shall the assembly or parts be contaminated by the cleaning agents employed. There shall be no chemical or electrochemical corrosive effects from the manufacturing process.

4. VERIFICATION

TABLE I: REQUIREMENT/VERIFICATION CROSS REFERENCE MATRIX

METHOD OF VERIFICATION
N/A – Not Applicable
1 – Analysis
2 – Demonstration
3 – Examination
4 – Test

CLASS OF VERIFICATION
A – Design Verification
B – First Article
C - Conformance

Section 3 Requirement	Paragraph Title	Verification Method					Verification Class			Section 4 verification
		N/A	1	2	3	4	A	B	C	
3.1	Design verification					X		X	X	4.2
3.2	First article					X		X	X	4.3
3.3	Interface & interoperability requirements	X								
3.3.1	Magnification					X		X	X	4.9
3.3.2	Exit pupils					X		X	X	4.9
3.3.3	Field of view					X		X	X	4.9
3.3.4	Weight					X		X	X	4.9
3.3.5	External covering					X		X	X	4.4.1
3.3.6	Eye cups, eye lens, and objective lens covers				X			X	X	4.4.2
3.3.7	Carrying strap					X		X	X	4.4.3
3.3.8	Maintainability					X	X			4.4.4
3.3.9	Anti-reflection Device (ARD)					X		X	X	4.4.7
3.3.10	Operability					X		X	X	4.5.4.1
3.4	Support & Ownership	X								
3.4.1	Binocular color				X			X	X	4.11
3.5.	Operating requirements	X								
3.5.1	Interpupillary torque					X		X	X	4.9
3.5.1.1	Interpupillary adjustment				X			X	X	4.9
3.5.2	Ocular				X			X	X	4.8
3.5.2.1	Filter masking					X	X			4.10
3.5.2.2	Beam size					X	X			4.10
3.5.2.3	Filter mounting					X	X			4.10
3.5.3	Anti-reflection coatings					X		X	X	4.4.8
3.5.4	Collimation					X		X	X	4.9
3.5.5	Clear eye distance					X		X	X	4.9
3.5.6	Resolution					X		X	X	4.4.9
3.5.7	Image tilt				X			X	X	4.9
3.5.8	Eyepiece focus					X		X	X	4.4.5
3.6.	Reticle presence				X			X	X	4.4.6
3.6.1	Reticle location				X		X			4.4.6.1
3.6.2	Cover plate				X		X			4.4.6.2
3.6.3	Index match & scale				X			X	X	4.4.6.3
3.6.4	Position					X		X	X	4.9
3.6.5	Parallax					X		X	X	4.9
3.7	Cleanliness and optical quality					X		X	X	4.12
3.8	Environmental requirements	X								4.5
3.8.1	Shock					X		X	X	4.5.1
3.8.2	Drop					X		X	X	4.5.2
3.8.3	Vibration					X		X	X	4.5.3

3.8.4	Temperature					X		X	X	4.5.4
3.8.4.1	Eyepiece					X		X	X	4.5.4.1
3.8.5	Humidity					X		X	X	4.5.5
3.8.6	Water tightness					X		X	X	4.5.6
3.9	Ozone depleting substance		X				X			4.6
3.10	Hazardous materials		X				X			4.7
3.11	Workmanship				X			X	X	4.12

4.1. Classification of verification. The Verification requirements specified herein are classified as follows:

a. Design verification (see 4.2).

b. First article inspection (see 4.3).

c. Conformance verification (see 4.4)

4.1.1 Verification conditions. Unless otherwise specified, all verifications shall be performed in accordance with the test conditions specified in this specification.

4.2. Design verification. When specified in the contract, a sample of (3) three M22 Binoculars shall be subjected to design verification in accordance with Table I, Requirement / Verification cross reference matrix. The verification of the filter mounting requirements shall be accomplished by design analysis and by means of a ray trace diagram.

4.2.1 Design verification test rejection. If any test samples fails to comply with the design verification requirements, the samples shall be rejected.

4.3 First article inspection. When specified in the contract or purchase order, a sample of the M22 binocular shall be subjected to first article verification test in accordance with Table 1 and attribute sampling per MIL-STD-1916.

4.3.1 First article quantities. The contractor shall submit a first article sample as designated by the Contracting Officer for evaluation in accordance with the provisions of 4.3.2. The first article sample shall consists of the assemblies, components and test specimens listed below in the quantities indicated unless otherwise specified in the contract.

QUANTITY	NOMENCLATURE	INSTRUCTIONS
5	Army Binocular, M22	Completely assembled with laser filters installed, painted and packaged for shipment
1	Antireflection Device	One pair for interface testing
9	M22 Laser Protection Filters	Protection Filter for the M22 Binocular

4.3.2 Inspection to be performed. The first article verification test shall be performed in accordance with Table I and any or all requirements of this specification and the applicable drawings.

4.3.3 First article rejection. If any test samples fails to comply with the first article requirements, the samples shall be rejected.

4.4 Conformance verification. Conformance inspection shall include the examination and tests listed in Table I using the attribute sampling plan in MIL-STD-1916. All verifications are classified as minor characteristics and shall use Verification Level II except for 3.5.4 and 3.5.6 that are classified as major characteristic and shall use Verification Level IV, 3.8.1 through 3.8.6 environmental requirements and the interchangeability requirement 3.3.6 which shall use Verification Level I reduced (as defined in MIL-Std-1916), and 3.5.2, which is, classified Critical level II. For definition of Major and Minor characteristics, see MIL-STD-1916. Critical level II is a 100 percent visual check for presence of the laser protection filter. (See 6.11 for definitions).

4.4.1 External covering. A visual and tactile examination of the binocular shall be performed for the existence of the external cover.

4.4.2 Eyecups, eye lens & object lens covers. The requirements for the eyecups, eye lens and objective covers shall be evaluated by visual and tactile examination to determine that the requirements are met. These items will be interchanged among three binoculars to determine their interchangeability.

4.4.3 Carrying strap. A weight of 9 ± 1 kilogram shall be hung from the strap and its binocular holding device for at least one minute. The strap width and length shall be measured to verify that they meet the requirements of 3.3.8. When inspected visually and tactilely there shall be no sign of ripping, tearing or breakage.

4.4.4 Maintainability. A visual and tactile examination shall be conducted to determine that the external parts per Figure 1 are replaceable.

4.4.5 Eyepiece focus. An operator wearing cold weather or artic gloves shall be able to freely rotate the eyepieces throughout the temperature range (See 4.5.4.1) without detecting any binding.

4.4.6 Reticle presence. The binocular shall be visually inspected for the presence of the reticle in the left eye ocular.

4.4.6.1 Reticle location. While looking through the binocular the reticle shall appear to be centered in the field of view at all times when rotating the eye piece.

4.4.6.2 Cover plate. The reticle thickness of the two pieces of cemented glass shall be measured with a micrometer or other equivalent measuring device.

4.4.6.3 Index match & scale. The reticle markings are to be examined with a tilting collimator to determine that the index match & scale requirements are met. The surface quality shall be verified in accordance with the test methods specified in MIL-PRF-13830B.

4.4.7 Anti-reflection device (ARD). When specified in this document, the binocular shall be evaluated with ARDs attached.

4.4.8 Anti-reflection coating. Optical anti-reflection coating shall be verified in accordance with the test methods specified in MIL-PRF- 13830B, Appendix C.

4.4.9 Resolution. Shall be verified using the test methods specified in MIL-PRF 13830B, Paragraph 4.2.5.

4.5 Environmental verification.

4.5.1 Shock. The binocular shall be subjected to a total of 12 shocks: four shocks along each of three mutually perpendicular axes, one of which shall be parallel to the hinge axis. In each position the binocular shall be subjected to four shock impulses with two impulses in each direction along the respective axis, for a total of 12 shocks. Each impulse shall be 40 ± 4 "G's", half sine wave with a time duration of 11 ±1 milliseconds. Subsequent to shock, the binocular shall show no signs of visual damage and shall meet the requirements of 3.5.4 & 3.5.6.

4.5.2 Drop. The ARD shall remain attached to the binocular when dropped three times with mechanical axis of binocular approximately level from a height of five feet onto a cloth covered sand pile.

4.5.3 Vibration. The binocular shall withstand vibration for 5 minutes each in 3 mutually perpendicular axes. Vibration in each axis shall be at a constant frequency of thirty cycles per second with an amplitude of 0.16 cm or 0.32 cm total excursion (1/16-inch or 1/8-inch total excursions) for a period of five minutes plus or minus 15 seconds. Subsequent to vibration, the binocular shall show no signs of visual damage and shall meet the requirements of 3.5.4 & 3.5.6.

4.5.4 Temperature. The binoculars shall be placed in a climatic chamber and the temperature reduced gradually (see "Note" below) to -40° ± 2 °F (-40 degrees C) and allowed to remain at this temperature for 4 hours. After thermal stabilization is reached the temperature shall gradually (see "Note" below) be increased to + 158° ± 2 °F (+70 degrees

C) and held constant for 4 hours. After thermal stabilization is reached the temperature shall then be reduced to standard ambient temperature of + 68° ± 2° F and allowed to remain at this temperature for 4 hours. The binoculars shall then be subjected to a visual and tactile examination for loose components.

Note: The rate of temperature change in the climatic chamber shall not exceed 3 degrees per minute throughout the temperature cycling tests of 4.5.4.

4.5.4.1 Operability. The binoculars shall be placed in a climatic chamber and the temperature reduced gradually (see "Note" above) to -40°± 2°C (-40 degrees F) and allowed to remain at this temperature for 1 hours. After thermal stabilization is reached the eyepiece shall be rotated and shall operate freely with no binding. The temperature shall gradually (see "Note" above) be increased to + 49°± 2°C (+120.2 degrees F) and held constant for 1 hour. After thermal stabilization the eyepiece shall be rotated and shall operate freely with no binding. The temperature shall then be reduced to standard ambient temperature of 68° ± 2° F and allowed to remain at this temperature for 1 hour. The binoculars shall then be subjected to a visual and tactile examination for loose components. Note: This test may be run concurrent with the above test of 4.5.4.

4.5.5 Humidity. The binocular assembly shall be preconditioned in a climatic chamber at 68 ± 2 °F with 50 ± 5% relative humidity for 24 hours prior to starting the test. Gradually raise the chamber temperature to 120° ± 2 °F and relative humidity to 94 ± 5%. After 12 hours of exposure at 120° F and 94 ± 5% humidity remove the item from the chamber, wipe the outside dry, and inspect. When inspected the item shall show no evidence of moisture within interior cavities.

4.5.6 Water-tightness. The binoculars completely assembled shall be submerged in water at room temperature (77° ± 2° F) or (25 ± 2 ° C) for one hour at a depth of one meter. Remove the item, wipe the outside dry, and inspect. When inspected the item shall show no evidence of moisture within interior cavities.

4.6 Ozone depleting substances (ODS) certification. Verify by analysis, demonstration or objective evidence that no ODS were generated by the production process of the M22 binocular and that the subsequent end product and by-products do not generate or contain any government listed ODSs.

4.7 Hazardous materials certification. Verify by analysis, demonstration or objective evidence that no hazardous materials were generated by the production process of the M22 binocular and that the subsequent end product and by-products shall not generate or contain any government listed Hazardous Materials.

4.8 Ocular. Perform 100% visual inspection for the presence of the laser filters in the binocular. The performance and test requirements for this filter are contained in Laser Protection Purchase Description 18360 for the M22 binocular, dated 29 Feb 2000, Classified Secret. The contractor is required to verify that all requirements are met.

4.9 Method of inspection. Devise and utilize verification methods that assure the applicable requirements will be met. The methods employed are to use recognized commercial practices and equipment intended for the particular verification.

4.10 Filter. Shall be verified by an analysis of the design and by means of a Ray Trace Diagram.

4.11 Binocular color. Visual inspect that the binocular color meets the requirements of FED- STD-595.

4.12 Workmanship verification. Verify the workmanship on the production sample of the M22 binocular by visual inspection. The sample shall be rejected if burrs, chips, cracks unblended radii, dirt, grease, porosity, warpage, or foreign matter are found on the external surface of the binocular

5 PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements should be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DOD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the military Department or Defense Agency or within the military Department's system command. Packaging data retrieval is available from the managing military Department or Defense Agency's automated packaging files, CD ROM products, or by contacting the responsible packaging activity.

6 NOTES

6.1 Intended Use. The binocular is a small laser-protected hand-held observation instrument intended for Military use. This binocular is a commercial item that is modified for military use, by addition of laser protection and a reticle. The binocular will be used by soldiers on the battlefield in all weather conditions.

6.2 Acquisition requirements. Procurement documents should specify the following:

a. Title, number and date of this performance specification.
b. Packaging requirements (See 5.1).
c. Requirements for Design verification (See 4.2).
d. Requirements for First article (See 4.3).
e. Applicable national stock number.
f. Serialization requirement.
g. Certificate of conformance for each lot or shipment of product.

6.3 Materials. The materials selected are the prerogative of the contractor provided the materials are capable of meeting the requirements specified. In the past rubber clad was used, leather is not an acceptable binocular material covering nor can it be used as eye cup material. The strap in the past was composed of nylon.

6.4 Submission of alternative materials provision. Notwithstanding the provisions for waiver of first article, an additional first article sample or portion thereof, may be ordered by the Contracting Officer in writing when a change occurs in the manufacturing process, material used, or source of supply. When the above occurs, the Contracting Officer should be notified so that a determination can be made concerning the need for an additional first article sample or portion thereof, and instructions provided concerning the submission, inspection and notification of results. Costs of the first article testing resulting from production process change, or material substitution, or source of supply should be borne by the Contractor.

6.5 Binocular operating Instruction Manual. The manual for the M22 binocular is owned and maintained by TACOM-RI Small Arms and Aircraft Armament Commodity Business Unit. They will be responsible for supplying manuals for every pair of binoculars.

6.6 Description: This specification covers the M22 (7x50) binocular with fold-down eyecups, eye lens cover, objective lens covers, rubber or other non-slip coating and a plastic or nylon carrying strap. It also incorporates a laser protection filter. The specification and performance requirement for this filter array are contained in a separate classified Purchase Description to this specification. Critical Safety Characteristics are indicated with the symbols: CSI. The binocular should be a non-maintainable design and should have replaceable eyecups, eye lens covers, objective lens covers, carrying strap and should be predominantly one basic color; black, color No 37030, green, color No 34094, or field drab, color No 33105.

6.7 Filter. The performance and test requirements for this filter are contained in SECRET addendum titled Laser Protection Filter for the M22 binocular.

6.8 Purchase Description. The Laser Protection Filter for the M22 binoculars is available upon request from the Contracting Officer, to those organizations with the required facility clearance and "need-to-know".

6.9 Classification. The contents of this specification are unclassified. The Purchase Description for the laser protection is classified.

6.10 Anti-reflection device (ARD). The only currently approved source for the specified ARD is Tenebraex, Corp. The address and web page for Tenebraex Corporation are: 326 A Street, Boston, MA 02210; <<http://www.camouflage.com/>>. Unless otherwise specified in the contract or purchase order, ARDs are not deliverable items and are only required with bid samples and FAT not production lots. However, tests shall be conducted in both FAT and production, with ARDs attached to the binocular, as specified in this document.

6.11 Critical Characteristics/ Critical Nonconformance's.

6.11.1 Definitions

6.11.2 Critical characteristic. An attribute of a system, item, assembly, subassembly, component or material that judgment and experience indicate must be met to avoid hazardous or unsafe conditions for individuals using, maintaining or depending upon the product; or that judgment and experience indicate must be met to assure performance of the tactical function of a major item such as a ship, aircraft, tank, missile or space vehicle. Critical characteristics are further classified as "Critical(I)" or "Critical (II)" depending on the type of nonconformance associated with the characteristic.

6.11.3 Level I critical nonconformance. A nonconformance of a critical characteristic that judgment and experience indicate is likely to result in hazardous or unsafe conditions for individuals using, maintaining or depending upon the product; or a nonconformance that judgment and experience indicate is likely to prevent performance of the tactical function of a major end item.

6.11.4 Level II critical nonconformance. A nonconformance of a critical characteristic, other than level I This includes the nonconformance of a characteristics that judgment and experience indicate may, depending upon the degree of variance from the design requirement, the presence of other nonconformance or procedural errors:

a. results in hazardous or unsafe conditions for individuals using, maintaining or depending upon the product, or

b. prevent performance of the tactical function of a major end item,

A level II critical nonconformance is also a nonconformance of a critical characteristic, which, due to technological limitations, may need to be, managed in a manner different than a level I nonconformance.

6.12 Special test equipment. Designs of special equipment and test procedures should be submitted to AMSTA-AR-QAC-F, Picatinny Arsenal, NJ 07806-5000 in accordance with the provisions of the contract prior to use.

6.13 Cover plate. The dimension cited is user safety interface requirements.

6.14 Key words:

Laser Eye Protection
Interpupillary Torque
Image Tilt
Anti-Reflection Coating
Ocular

Generic M22 Binocular

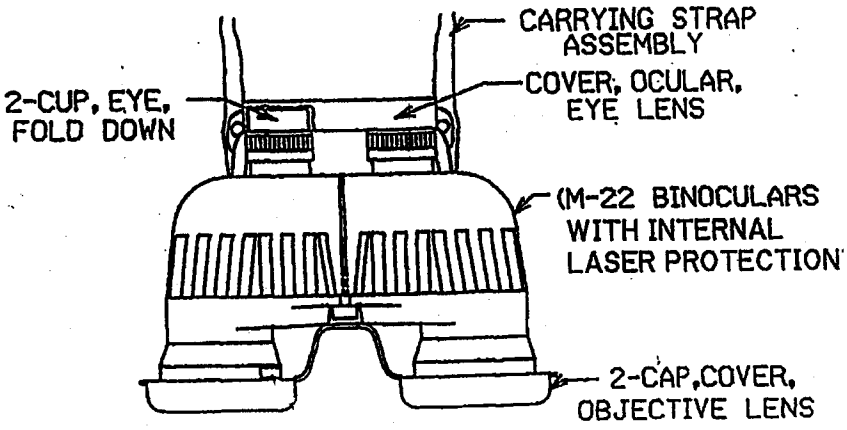


Figure 1. Outline Drawing Of Generic M22 Binocular Showing External Spare Parts

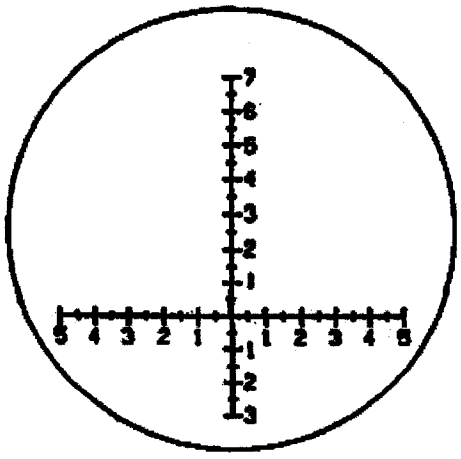


Figure 2. Reticle Depiction

PROGRAM PECULIAR SPECIFICATION IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The design activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The design activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced documents(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER	2. DOCUMENT DATE (YYMMDD)

3. DOCUMENT TITLE

4. NATURE OF CHANGE (*Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.*)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (*Last, First, Middle Initial*)	b. ORGANIZATION	
c. ADDRESS (*Include Zip Code*)	d. TELEPHONE (*Include Area Code*) (1) Commercial (2) AUTOVON (*if applicable*)	7. DATE SUBMITTED (*YYMMDD*)

8. DESIGN ACTIVITY

a. NAME	b. TELEPHONE (*Include Area Code*) (1) Commercial (2) AUTOVON **(201) 724- 880-**
c. ADDRESS (*Include Zip Code*)	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: COMMANDER TACOM-ARDEC ATTN: AMSTA-AR QAW PICATINNY ARSENAL, NJ 07806-5000

ATTACHMENT 002
DAAE20-00-R-0062

PRF 12938983
CAGE Code: 19200
AMSTA-AR-QAT-F
1 September 2000

PERFORMANCE SPECIFICATION

FOR THE

M24 (7X28) MINIATURE BINOCULAR

U.S. Army TACOM-ARDEC
Picatinny Arsenal, NJ 07806-5000

Prepared by
TACOM-ARDEC Quality Engineering Directorate
Direct Fire/Fire Control Team AMSTA-AR-QAT-F

FSC: 1240

1. SCOPE

1.1. Scope. This specification covers the M24 (7 X 28) Miniature binocular. The binocular includes: a reticle, and two laser eye protection filters.

2. APPLICABLE DOCUMENTS.

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all requirements documents cited in sections 3 and 4 of this specification, whether or not documents are listed.

2.2 Government documents:

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form of the exact revision listed below form a part of this specification to the extent specified herein.

SPECIFICATIONS

DEPARTMENT OF DEFENSE

MIL-PRF-131 J	Barrier Materials, Water Vapor Proof, Grease Proof Flexible Heat Seal.
MIL-STD-129 N	Military Marking
MIL-STD-1916	DOD Preferred Methods for Acceptance of Product
MIL-PRF-13830B	Optical Components for Fire Control Instruments; General Specification Governing The Manufacture, Assembly, and Inspection

STANDARDS

FED-STD-595	Colors used in Government Procurement

(Unless otherwise indicated, copies of the above specification, standards, and drawings, and handbooks are available from the Standardization Document Order Desk, 700 Robins Avenue, Bldg. 4D, Philadelphia, PA 1911-5094. Other information about current standards is available at the following Internet address: http: / / www.dodssp.daps.mil / dodssp.htm)

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publication of the exact revision listed below form a part of this specification to the extent specified herein.

DOCUMENTS (See 6.7)

US ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER (ARDEC)

Purchase Description 18360 Laser Protection Filter for the M22 & M24 Mini Binocular, dated 29 Feb. 2000, Classified Secret.

(Copies of other Government documents, drawings and publications required by contractors in connection with specific acquisition functions should be obtained from U.S. Army TACOM-ARDEC, AMSTA-AR-QAW, Picatinny Arsenal, NJ 07806-5000)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Design verification. When specified in the contract (see 6.2), three (3) samples of the M24 Miniature Binoculars shall be subjected to design verification in accordance with 4.2.

3.2 First article. When specified in the contract (see 6.2), samples shall be subjected to first article inspection in accordance with 4.3.

3.3 Interface and interoperability requirements: All requirements stated herein are with the Anti -reflection Devices (ARDs) removed.

3.3.1 Magnification. Magnification of each prism telescope of the binocular shall be equal to or between 6.8 and 7.2 power. Magnification differences of the two barrels shall not exceed 2%.

3.3.2 Exit pupils. Diameter of exit pupil shall be between 3.9 and 4.1 millimeters.

3.3.3 Field of view. The minimum field of view at 1000 meters shall be 113 meters.

3.3.4 Weight. The maximum weight with strap and lens caps shall not exceed 570 grams.

3.3.5 Size. The binocular shall fit in a box with internal envelope dimensions of 135mm X 125mm X 68mm.

3.3.6 External covering. The external surfaces of the binocular bodies shall be non-reflective and have a non-slip covering with a matte surface, designed to prevent slipping while in the users hands. The covering shall also serve to protect the binoculars from minor bumps, shocks, and abrasion.

3.3.7 Eyecups, eye lens covers, and objective lens covers. The M24 binocular shall be provided with eyecups, which shall be foldable. The binocular shall also be provided with covers for the objective and eye lenses. These components shall be made of tear-resistant material. The eye lens covers shall be attached to the binocular or the carrying strap in such a way as to allow binocular operation and prevent loss of the covers when removed from the lenses. The objective lens covers shall be attached to the binocular center hinge bolt by straps or extensions of the cover material so that the covers will fall below the field of view when the binocular is in use. The cups and covers shall be interchangeable among M24 binoculars.

3.3.8 Carrying strap. The binocular shall be equipped with a carrying strap between 0.9 cm and 1.3 cm. wide. The strap shall be between 97 and 112 cm in length. The strap shall be firmly attached to the binocular body and shall be detachable for replacement. The carrying strap shall be of a material with high strength/stress reinforcement and shall be capable of supporting the binocular weight during normal use. The strap shall be capable of supporting a 9 ±1 kilogram weight. Carrying strap and connectors shall be non-reflective; color shall match that of binoculars (see 3.4.1).

3.3.9 Maintainability. Binocular shall be designed for ease of replacement of the following external replaceable parts. Figure 1. is an outline drawing of generic M24 Binocular showing replaceable external parts.

ITEM NO.	QUANTITY PER BINOCULAR	ITEM DESCRIPTION
1	1	Strap Assembly
2	1	Cover, Eye Lens
3	2	Cover, Objective Lens
4	2	Eye Cup, Fold Down

3.3.10 Anti-reflection Device (ARD). Each objective assembly of the binocular must interface with the ARD (See 6.10) currently within the army stockpile system per NSN 6650-01-456-6516.

3.3.11 Operability. The ARD shall be able to be attached and detached without the use of tools (fingers only) and shall take no more than 30 seconds per system to attach and remove after two hours at each of the following temperatures: minus 25 degrees C, room temperature and plus 49 degrees C.

3.4 Support & Ownership.

3.4.1 Binocular Color. The binocular shall be predominantly one basic color: black, color No 37030, green, color No 34094, or field drab, color No 33105 per Fed-Std-595.

3.5 Operating requirements.

3.5.1 Interpupillary torque. The interpupillary running torque values shall be between 3.46 to 25.3 kg-cm (3 to 22 in-lb) at each of the following temperatures: room temperature: minus 25 degrees C and; plus 49 degrees C.

3.5.1.1 Interpupillary adjustment. The binocular must have an interpupillary distance scale which covers a minimum range of 58 to 72 millimeters (2.28 to 2.83 in) Graduation shall be provided and shall be suitable for the intended purpose. Marked settings shall be accurate within ± 1 millimeter of true position.

3.5.2 Ocular. Each ocular of the Binocular shall contain a laser eye protection filter array per Purchase Description 18360 (secret document). All requirements of the document shall be met.

3.5.2.1 Filter masking. The laser protection filter shall be mounted on the image side of the objective lens such that no laser energy can pass through the filter outside its clear aperture.

3.5.2.2 Beam size. The beam or spot diameter at the filter location shall not be less than 0.7 mm when a collimated 1.0 mm diameter beam is projected on to the objective lens.

3.5.2.3 Filter mounting. The laser eye protection filter array may be used in parallel or non-parallel light provided that the angle of the extreme ray does not exceed twelve degrees.

3.5.3 Anti-reflection coatings. All optical elements shall be anti-reflection coated in accordance with the requirements of MIL-PRF-13830.

3.5.4 Collimation. The binocular collimation shall be within the following range for any interpupillary setting, at the zero diopter setting.

Divergence	40 minutes of arc max.
Dipvergence (from horizontal)	30 minutes of arc max.
Convergence	3 minutes of arc max.

3.5.5 Clear eye distance. The clear eye distance of the binocular shall be a minimum of 9 millimeters (0.35 in) and maximum of 22 millimeters (0.87 in).

3.5.6 Resolution. Not greater than 9 seconds of arc, when measured at the center of the field of view. horizontal and vertical lines shall be resolved within 0.5 diopters.

3.5.7 Image tilt. The images of an infinity plumb line formed by the two optical systems shall be parallel to each other within one degree of arc. Neither image shall vary from the vertical by more than one degree of arc.

3.5.8 Eyepiece focus. Individual eyepiece focus is required. The individual eyepieces shall be adjustable through a true range of ± 4 diopters. The individual diopter scales shall be graduated through a minimum range of ± 4 diopters. Markings shall be provided every diopter. Markings shall be accurate within ± 0.25 diopters.

3.6 Reticle presence. The binocular shall have a reticle per the following.

3.6.1 Reticle location. The reticle shall be contained in the left eye ocular and shall be centered in the field of view.

3.6.2 Cover plate. The reticle shall be a two piece cemented type consisting of a reticle and a cover plate. The cover plate shall have a thickness of 0.25 cm ± .025 cm.

3.6.3 Index match & scale. The cover glass and reticle glass shall be from the same glass melt. The index of refraction of the cement used shall match the indices of the glass within ± 0.001. External surfaces shall have a surface quality of 20-10 or better. The back surface (air to glass) of the reticle and the air to glass surface of the cover glass shall have an anti-reflection coating. The surface quality at the reticle surface of both pieces shall be 10-5. The horizontal reticle line is to cover a total range of at least 100 meters at 1000 meters distance. The scale shall be etched with graduations depicting 5 meter increments at 1000 meters. The reticle shall contain a vertical scale, which is centered along the horizontal line. The vertical scale shall cover a total range of at least 100 meters at 1000meters distance with 30 meters at 1000 meters distance below the horizontal line and shall be graduated so as to depict 5-meter increments at 1000 meters distance.

3.6.4 Position. The horizontal reticle line shall be parallel to a line joining the centers of the right and left objective at an interpupillary distance setting of 63 ± 1 millimeter. The reticle shall be of such a design that the user can readily identify the 10-meter graduations from the center of the scale. The reticle shall be otherwise suitable for its intended purpose.

3.6.5 Parallax. Parallax, when measured at the center of the field, shall not exceed 1.0 mil when measured at the center of the reticle.

3.7 Cleanliness and optical quality. Binoculars shall be designed and constructed to provide a clear image, free of flare from non-optical surfaces. The optical parts and entire interior of the binocular shall be clean and free from dirt, dust, grease and other foreign matter. There shall be no specks of dirt obvious to the unaided eye, which would impair optical performance when looking into the binocular eyepiece against a background having the brightness of the sky in average daylight. The binocular interior shall be free from lubricants and coatings, which may bleed, outgas, chip or flake.

3.8 Environmental requirements. The binocular shall be capable of withstanding the following environments without physical damage or degradation of optical characteristics.

3.8.1 Shock. The binocular shall withstand a total of 12 shocks. Each impulse shall be 40± 4"Gs", half sine with a time duration of 11±1 millisecond.

3.8.2 Drop. The ARD shall remain attached to the binocular when dropped three times from a height of five feet.

3.8.3 Vibration. The binocular shall withstand vibration at a constant frequency of 30 cycles per second with amplitude of 0.16 cm or 0.32 cm total excursion (1/16 inch or 1/8 inch).

3.8.4 Temperature. The binoculars shall withstand temperatures of -40 degrees C and +70 degrees C (-40 degrees F and +158 degrees F) without damage or internal fogging.

3.8.4.1 Eyepiece. The eyepiece diopter scale shall withstand and operate freely within the range of temperature from -40 degrees C to +49 degrees C (-40 degrees F to +120.2 degrees F).

3.8.5 Humidity. The binocular shall show no sign of moisture intrusion or internal fogging after exposure of 24.0 ± .25 hours at a relative humidity of 94 ± 5% from 20 ±2.5 degrees C (68 degrees F) to +49 degrees C (120 degrees F).

3.8.6 Water tightness. Binocular shall remain watertight while withstanding immersion in one meter of ambient temperature water for a sixty-minute period.

3.9 Ozone depleting substances (ODS). The production process of the M24 Miniature binocular and the subsequent end product and by-products shall not generate or contain any government listed ODSs.

3.10 Hazardous materials. The production process of the M24 Miniature binocular and the subsequent by products shall not generate or contain any government listed Hazardous Materials.

3.11 Workmanship. All components shall be free of chips, dirt, grit, or other foreign material. The cleaning methods used shall not damage any assembly or parts nor shall the assembly or parts be contaminated by the cleaning agents employed. There shall be no chemical or electrochemical corrosive effects from the manufacturing process.

4. VERIFICATION

TABLE I: REQUIREMENT/VERIFICATION CROSS REFERENCE MATRIX

METHOD OF VERIFICATION
N/A – Not Applicable
1 – Analysis
2 – Demonstration
3 – Examination
4 – Test

CLASS OF VERIFICATION
A – Design Verification
B – First Article
C - Conformance

Section 3 Requirement	Paragraph Title	Verification Method					Verification Class			Section 4 verification
		N/A	1	2	3	4	A	B	C	
3.1	Design verification					X		X	X	4.2
3.2	First article					X		X	X	4.3
3.3	Interface & interoperability requirements	X								
3.3.1	Magnification					X		X	X	4.9
3.3.2	Exit pupils					X		X	X	4.9
3.3.3	Field of view					X		X	X	4.9
3.3.4	Weight					X		X	X	4.9
3.3.5	Size					X		X	X	4.9
3.3.6	External covering					X		X	X	4.4.1
3.3.7	Eye cups, eye lens, and objective lens covers				X			X	X	4.4.2
3.3.8	Carrying strap					X		X	X	4.4.3
3.3.9	Maintainability					X	X			4.4.4
3.3.10	Anti-reflection Device (ARD)					X		X	X	4.4.7
3.3.11	Operability					X		X	X	4.5.4.1
3.4	Support & Ownership	X								
3.4.1	Binocular color				X			X	X	4.11
3.5.	Operating requirements	X								
3.5.1	Interpupillary torque					X		X	X	4.9
3.5.1.1	Interpupillary adjustment				X			X	X	4.9
3.5.2	Ocular				X			X	X	4.8
3.5.2.1	Filter masking					X	X			4.10
3.5.2.2	Beam size					X	X			4.10
3.5.2.3	Filter mounting					X	X			4.10
3.5.3	Anti-reflection coatings					X		X	X	4.4.8
3.5.4	Collimation					X		X	X	4.9
3.5.5	Clear eye distance					X		X	X	4.9
3.5.6	Resolution					X		X	X	4.4.9
3.5.7	Image tilt				X			X	X	4.9
3.5.8	Eyepiece focus					X		X	X	4.4.5
3.6.	Reticle presence				X			X	X	4.4.6
3.6.1	Reticle location				X		X			4.4.6.1
3.6.2	Cover plate				X		X			4.4.6.2
3.6.3	Index match & scale				X			X	X	4.4.6.3
3.6.4	Position					X		X	X	4.9
3.6.5	Parallax					X		X	X	4.9
3.7	Cleanliness and optical quality					X		X	X	4.12
3.8	Environmental requirements	X								4.5
3.8.1	Shock					X		X	X	4.5.1
3.8.2	Drop					X		X	X	4.5.2
3.8.3	Vibration					X		X	X	4.5.3

3.8.4	Temperature					X		X	X	4.5.4
3.8.4.1	Eyepiece					X		X	X	4.5.4.1
3.8.5	Humidity					X		X	X	4.5.5
3.8.6	Water tightness					X		X	X	4.5.6
3.9	Ozone depleting substance		X				X			4.6
3.10	Hazardous materials		X				X			4.7
3.11	Workmanship				X			X	X	4.12

4.1. Classification of verification. The Verification requirements specified herein are classified as follows:

a. Design verification (see 4.2).

b. First article inspection (see 4.3).

c. Conformance verification (see 4.4)

4.1.1 Verification conditions. Unless otherwise specified, all verifications shall be performed in accordance with the test conditions specified in this specification.

4.2. Design verification. When specified in the contract, a sample of (3) three M24 Mini Binoculars shall be subjected to design verification in accordance with Table I, Requirement / Verification cross-reference matrix. The verification of the filter mounting requirements shall be accomplished by design analysis and by means of a ray trace diagram.

4.2.1 Design verification test rejection. If any test samples fails to comply with the design verification requirements, the samples shall be rejected.

4.3 First article inspection. When specified in the contract or purchase order, a sample of the M24 Miniature binocular shall be subjected to first article verification test in accordance with Table 1 and attribute sampling per MIL-STD-1916.

4.3.1 First article quantities. The contractor shall submit a first article sample as designated by the Contracting Officer for evaluation in accordance with the provisions of 4.3.2. The first article sample shall consists of the assemblies, components and test specimens listed below in the quantities indicated unless otherwise specified in the contract..

QUANTITY	NOMENCLATURE	INSTRUCTIONS
5	Miniature Binocular, M24	Completely assembled with laser filters installed, painted and packaged for shipment
1	Antireflection Device	One pair for interface testing
9	M24 Laser Protection Filters	Protection Filter for the M24 Mini Binocular

4.3.2 Inspection to be performed. The first article verification test shall be performed in accordance with Table I and any or all requirements of this specification and the applicable drawings.

4.3.3 First article rejection. If any test samples fails to comply with the first article requirements, the samples shall be rejected.

4.4 Conformance verification. Conformance inspection shall include the examination and tests listed in Table I using the attribute sampling plan in MIL-STD-1916. All verifications classified as minor characteristics shall use Verification Level II, except for 3.5.4 and 3.5.6 that are classified as major characteristic and shall use Verification Level IV, 3.8.1 through 3.8.6 environmental requirements and the interchangeability requirement 3.3.6 which shall use Verification Level I Reduced (as defined in MIL-Std-1916) and 3.5.2 which is classified Critical level II. For definition of Major and Minor characteristics, see

MIL-STD-1916. Critical level II is a 100 percent visual check for presence of the laser protection filter. (See 6.11 for definitions).

4.4.1 External covering. A visual and tactile examination of the binocular shall be performed for the existence of the external cover.

4.4.2 Eyecups, eye lens & object lens covers. The requirements for the eyecups, eye lens and objective covers shall be evaluated by visual and tactile examination to determine that the requirements are met. These items will be interchanged among three binoculars to determine their interchangeability.

4.4.3 Carrying strap. A weight of 9 ± 1 kilogram shall be hung from the strap and its binocular holding device for at least one minute. The strap width and length shall be measured to verify that they meet the requirements of 3.3.8. When inspected visually and tactilely there shall be no sign of ripping, tearing or breakage.

4.4.4 Maintainability. A visual and tactile examination shall be conducted to determine that the external parts per Figure 1 are replaceable.

4.4.5 Eyepiece focus. An operator wearing cold weather or artic gloves shall be able to freely rotate the eyepieces throughout the temperature range (see 4.5.4.1) without detecting any binding.

4.4.6 Reticle presence. The binocular shall be visually inspected for the presence of the reticle in the left eye ocular.

4.4.6.1 Reticle location. While looking through the binocular the reticle shall appear to be centered in the field of view at all times when rotating the eyepiece.

4.4.6.2 Cover plate. The reticle thickness of the two pieces of cemented glass shall be measured with a micrometer or other equivalent measuring device.

4.4.6.3 Index match & scale. The reticle markings are to be examined with a tilting collimator to determine that the index match & scale requirements are met. The surface quality shall be verified in accordance with the test methods specified in MIL-PRF-13830B.

4.4.7 Anti-reflection device (ARD). When specified in this document, the binocular shall be evaluated with ARDs attached.

4.4.8 Anti-reflection coating. Optical anti-reflection coating shall be verified in accordance with the test methods specified in MIL-PRF-1380B, Appendix C.

4.4.9 Resolution. Shall be verified using the test methods specified in MIL-PRF-13830B, Paragraph 4.2.5.

4.5 Environmental verification.

4.5.1 Shock. The binocular shall be subjected to a total of 12 shocks: four shocks along each of three mutually perpendicular axes, one of which shall be parallel to the hinge axis. In each position the binocular shall be subjected to four shock impulses with two impulses in each direction along the respective axis, for a total of 12 shocks. Each impulse shall be 40 ± 4 "G's", half sine wave with a time duration of 11 ±1 milliseconds. Subsequent to shock, the binocular shall show no signs of visual damage and shall meet the requirements of 3.5.4 & 3.5.6.

4.5.2 Drop. The ARD shall remain attached to the binocular when dropped three times with mechanical axis of binocular approximately level from a height of five feet onto a cloth covered sand pile.

4.5.3 Vibration. The binocular shall withstand vibration for 5 minutes each in 3 mutually perpendicular axes. Vibration in each axis shall be at a constant frequency of thirty cycles per second with amplitude of 0.16 cm or 0.32 cm total excursion (1/16-inch or1/8-inch total excursions) for a period of five minutes plus or minus 15 seconds. Subsequent to vibration, the binocular shall show no signs of visual damage and shall meet the requirements of 3.5.4 & 3.5.6.

4.5.4 Temperature. The binoculars shall be placed in a climatic chamber and the temperature reduced gradually (see "Note" below) to -40° ± 2°F (-40 degrees C) and allowed to remain at this temperature for 4 hours. After thermal stabilization is reached the temperature shall gradually (see "Note" below) be increased to + 158° ± 2 °F (+70 degrees C) and held constant for 4 hours. After thermal stabilization is reached the temperature shall then be reduced to standard ambient temperature of 68° ± 2° F and allowed to remain at this temperature for 4 hours. The binoculars shall then be subjected to a visual and tactile examination for loose components.

Note: The rate of temperature change in the climatic chamber shall not exceed 3 degrees per minute throughout the temperature cycling tests of 4.5.4.

4.5.4.1.1.1 Operability. The binoculars shall be placed in a climatic chamber and the temperature reduced gradually (see "Note" above) to -40°± 2°C (-40 degrees F) and allowed to remain at this temperature for 1 hour. After thermal stabilization is reached the eyepiece shall be rotated and shall operate freely with no binding. The temperature shall gradually (see "Note" above) be increased to + 49°± 2°C (+120.2 degrees F) and held constant for 1 hour. After thermal stabilization the eyepiece shall be rotated and shall operate freely with no binding. The temperature shall then be reduced to standard ambient temperature of 68 ± 2°F and allowed to remain at this temperature for 1 hour. The binoculars shall then be subjected to a visual and tactile examination for loose components. Note: This test may be run concurrent with the above test of 4.5.4.

4.5.5 Humidity. The binocular assembly shall be preconditioned in a climatic chamber at 68° ± 2 °F with 50 ± 5% relative humidity for 24 hours prior to starting the test. Gradually raise the chamber temperature to 120° ± 2 °F and relative humidity to 94 ± 5%. After 12 hours of exposure at 120° F and 94 ± 5% humidity remove the item from the chamber, wipe the outside dry, and inspect. When inspected the item shall show no evidence of moisture within interior cavities.

4.5.6 Water-tightness. The binoculars completely assembled shall be submerged in water at room temperature (77° ± 2° F) or (25 ± 2 ° C) for one hour at a depth of one meter. Remove the item, wipe the outside dry, and inspect. When inspected the item shall show no evidence of moisture within interior cavities.

4.6 Ozone depleting substances (ODS) certification. Verify by analysis, demonstration or objective evidence that no ODS were generated by the production process of the M24 Miniature binocular and that the subsequent end product and by-products do not generate or contain any government listed ODSs.

4.7 Hazardous materials certification. Verify by analysis, demonstration or objective evidence that no hazardous materials were generated by the production process of the M24 Miniature binocular and that the subsequent end product and by-products shall not generate or contain any government listed Hazardous Materials.

4.8 Ocular. Perform a 100% visual inspection for the presence of the laser filters in the binocular. The performance and test requirements for this filter are contained in Laser Protection Purchase Description 18360 for the M24 Binocular, dated 29 Feb 2000, Classified Secret. The contractor is required to verify that all requirements are met.

4.9 Method of inspection. Devise and utilize a verification methods that assure the applicable requirements will be met. The methods employed are to use recognized commercial practices and equipment intended for the particular verification.

4.10 Filter. Shall be verified by an analysis of the design and by means of a Ray Trace Diagram.

4.11 Binocular color. Visual inspect that the binocular color meets the requirements of FED- STD-595.

4.12 Workmanship verification. Verify the workmanship on the production sample of the M24 Miniature binocular by visual inspection. The sample shall be rejected if burrs, chips, cracks unblended radii, dirt, grease, porosity, warpage, or foreign matter are found on the external surface of the binocular

5 PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DOD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the military Department or Defense Agency or within the military Department's system command. Packaging data retrieval is available from the managing military Department or Defense Agency's automated packaging files, CD ROM products, or by contacting the responsible packaging activity.

6 NOTES

6.1 Intended Use. The binocular is a small laser-protected hand-held observation instrument intended for Military use. This binocular is a commercial item that is modified for military use, by addition of laser protection and a reticle. The binocular will be used by soldiers on the battlefield in all weather conditions.

6.2 Acquisition requirements. Procurement documents should specify the following:

a. Title, number and date of this performance specification.
b. Packaging requirements (See 5.1).
c. Requirements for Design verification (See 4.2).
d. Requirements for First article (See 4.3).
e. Applicable national stock number.
f. Serialization requirement.
g. Certificate of conformance for each lot or shipment of product.

6.3 Materials. The materials selected are the prerogative of the contractor provided the materials are capable of meeting the requirements specified. In the past rubber clad was used, leather is not an acceptable binocular material covering nor can it be used as eyecup material. The strap in the past was composed of nylon.

6.4 Submission of alternative materials provision. Notwithstanding the provisions for waiver of first article, an additional first article sample or portion thereof, may be ordered by the Contracting Officer in writing when a change occurs in the manufacturing process, material used, or source of supply. When the above occurs, the Contracting Officer should be notified so that a determination can be made concerning the need for an additional first article sample or portion thereof, and instructions provided concerning the submission, inspection and notification of results. Costs of the first article testing resulting from production process change, or material substitution, or source of supply should be borne by the Contractor.

6.5 Binocular operating Instruction Manual. The manual for the M24 Mini Binocular is owned and maintained by TACOM-RI Small Arms & Aircraft Armament Commodity Business Unit. They with each pair of binoculars will supply a copy.

6.6 Description: This specification covers the M24 (7x28) Miniature Binocular with fold-down eyecups, eye lens cover, objective lens covers, rubber or other non-slip coating and a plastic or nylon carrying strap. It also incorporates a laser protection filter. The specification and performance requirement for this filter array are contained in a separate classified Purchase Description to this specification. Critical Safety Characteristics are indicated with the symbols: CSI. The binocular should be a non-maintainable design and should have replaceable eyecups, eye lens covers, objective lens covers, carrying strap and should be predominantly one basic color; black, color No 37030, green, color No 34094, or field drab, color No 33105.

6.7 Filter. The performance and test requirements for this filter are contained in SECRET addendum titled Laser Protection Filter for the M24 Mini Binocular.

6.8 Purchase Description. The Laser Protection Filter for the M24 Mini Binoculars is available upon request from the Contracting Officer, to those organizations with the required facility clearance and "need-to-know".

6.9 Classification. The contents of this specification are unclassified. The Purchase Description of the laser protection filter is classified.

6.10 Anti-reflection device (ARD). The only currently approved source for the specified ARD is Tenebraex, Corp. The address and web page for Tenebraex Corporation are: 326 A Street, Boston, MA 02210; <<http://www.camouflage.com/>>. Unless otherwise specified in the contract or purchase order, ARDs are not deliverable items and are only required to be shipped with bid samples and FAT not production lots. However, tests shall be conducted in both FAT and production, with ARDs attached to the binocular, as specified in this document.

6.11 Critical Characteristics/ Critical Nonconformance's.

6.11.1 Definitions

6.11.2 Critical characteristic. An attribute of a system, item, assembly, subassembly, component or material that judgment and experience indicate must be met to avoid hazardous or unsafe conditions for individuals using, maintaining or depending upon the product; or that judgment and experience indicate must be met to assure performance of the tactical function of a major item such as a ship, aircraft, tank, missile or space vehicle. Critical characteristics are further classified as "Critical(I)" or "Critical (II)" depending on the type of nonconformance associated with the characteristic.

6.11.3 Level I critical nonconformance. A nonconformance of a critical characteristic that judgment and experience indicate is likely to result in hazardous or unsafe conditions for individuals using, maintaining or depending upon the product; or a nonconformance that judgment and experience indicate is likely to prevent performance of the tactical function of a major end item.

6.11.4 Level II critical nonconformance. A nonconformance of a critical characteristic, other than level I This includes the nonconformance of a characteristics that judgment and experience indicate may, depending upon the degree of variance from the design requirement, the presence of other nonconformance or procedural errors:

a. results in hazardous or unsafe conditions for individuals using, maintaining or depending upon the product, or

b. prevent performance of the tactical function of a major end item,

A level II critical nonconformance is also a nonconformance of a critical characteristic, which, due to technological limitations, may need to be, managed in a manner different than a level I nonconformance.

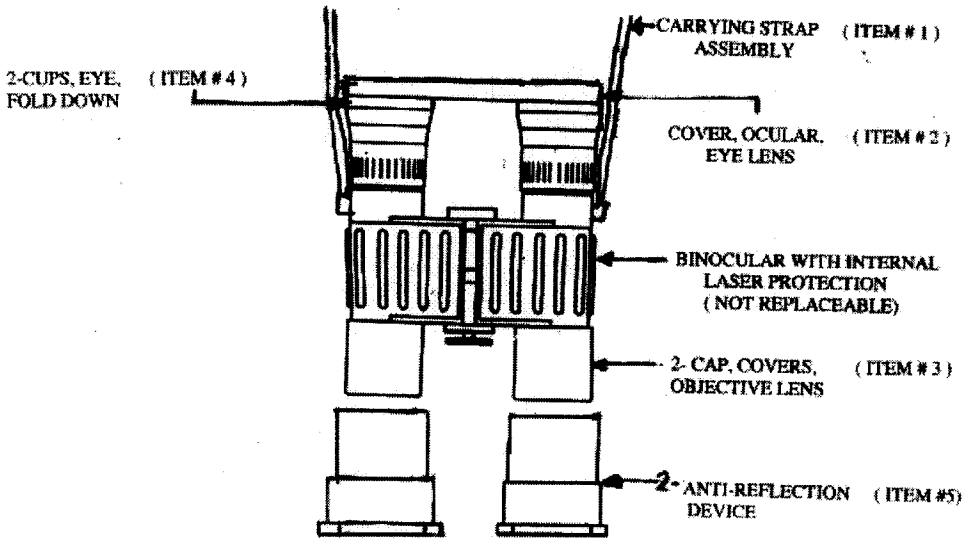
6.12 Special test equipment. Designs of special equipment and test procedures should be submitted to AMSTA-AR-QAC-F, Picatinny Arsenal, NJ 07806-5000 in accordance with the provisions of the contract prior to use.

6.13 Key words:

Laser Eye Protection
Interpupillary Torque
Image Tilt
Anti-Reflection Coating
Ocular

Generic M24-7X28 Miniature Binocular

Figure 1. Outline Drawing of M24 Binocular Showing Replaceable External Spare Parts



PROGRAM PECULIAR SPECIFICATION IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The design activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The design activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced documents(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER	2. DOCUMENT DATE (YYMMDD)
3. DOCUMENT TITLE		

4. NATURE OF CHANGE (*Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER		
a. NAME (*Last, First, Middle Initial*)	b. ORGANIZATION	
c. ADDRESS (*Include Zip Code*)	d. TELEPHONE (*Include Area Code*) (1) Commercial (2) AUTOVON (*if applicable*)	7. DATE SUBMITTED (*YYMMDD*)

8. DESIGN ACTIVITY	
a. NAME	b. TELEPHONE (*Include Area Code*) (1) Commercial (2) AUTOVON **(201) 724- 880-**
c. ADDRESS (*Include Zip Code*)	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: COMMANDER TACOM-ARDEC ATTN: AMSTA-AR QAW PICATINNY ARSENAL, NJ 07806-5000

Pricing Evaluation Summary
ATTACHMENT 003

CLIN 0001AA

M22 Binocular

NSN: 1240-01-361-1318

First Article Test

Range	Period 1 Unit Price	Wgt.	Period 2 Unit Price	Wgt.	Period 3 Unit Price	Wgt.	Period 4 Unit Price	Wgt.	Period 5 Unit Price	Wgt.
1000-1499		30%		30%		30%		30%		30%
1500-2999		50%		50%		50%		50%		50%
3000-3999		15%		15%		15%		15%		15%
4000-5000		5%		5%		5%		5%		5%
weighted total										

CLIN 0002AA

M24 Binocular

NSN: 1240-01-430-6944

First Article Test

Range	Period 1 Unit Price	Wgt.	Period 2 Unit Price	Wgt.	Period 3 Unit Price	Wgt.	Period 4 Unit Price	Wgt.	Period 5 Unit Price	Wgt.
50-149		10%		10%		10%		10%		10%
150-249		50%		50%		50%		50%		50%
250-349		30%		30%		30%		30%		30%
350-449		10%		10%		10%		10%		10%
weighted total										

1. This will be an all or none procurement. Contractor's failing to bid on all items, all years, and all ranges may be disqualified.
2. For evaluation purposes, the Government has weighted the ranges based on the likelihood that if an order is placed, it will be placed in that particular range. An evaluation price will be calculated by multiplying the offered prices by their respective weights and minimum quantities for each range on each line item and adding the totals for all years.
3. First Article Testing (FAT) is required on this product prior to production. The box to the right of **First Article Test** for your proposed price of FAT. The location of the box indicates the year of the FAT requirement. Failure to propose on FAT may be a reason for disqualification.
4. FAT costs proposed will be added to the evaluation price in the total as explained in note 2, above.
5. The FAT price will be priced separately, and will be amortized into the unit price for the first ordering quantity.

BID SAMPLE BINOCUALR TEST PLAN

ATTACHMENT 004
DAAE20-00-R-0062

1. Bid Samples.

1.1 The offeror shall submit three identical bid samples for each type of binocular specified in the solicitation (7X50 M22 and/or M24 Mini Binocular). The bid samples will be evaluated for each of the following requirements of Performance Spec for the M22 (7X50) Prism Binoculars and M24 Binoculars (Attachments 001 and 002)

(a) PS paragraph 3.3.1 Magnification. Requirement: magnification of each prism telescope of the binocular shall be between 6.8 and 7.2 power.

(a.1) Evaluation. All bid samples must pass this requirement or a failure is recorded.

(b) PS paragraph 3.3.2 Exit Pupils. Requirement: diameter of exit pupil shall be between: 3.9 and 4.1 millimeters for the M24 Mini Binocular and; 6.9 and 7.3 millimeters for the M22 Binocular.

(b.1) Evaluation. All bid samples must pass this requirement or a failure is recorded.

(c) PS paragraph 3.5.6 Resolution. Requirement: not greater than 9 seconds of arc, when measured at the center of the field of view with a 6X dioptmeter. Horizontal and vertical lines shall be resolvable within 0.5 diopter.

(c.1) Evaluation. Two out of three samples (both right and left telescopes) must pass this requirement or a failure is recorded.

(d) PS paragraph 3.5.8 Eyepiece Focus. Requirement: individual eyepiece focus is required for each ocular.

(d.1) Evaluation All bid samples must pass this requirement or a failure is recorded.

(e) PS paragraph 3.8.6 Water Tightness. Requirement: binocular shall remain watertight while withstanding immersion in one meter of ambient temperature water for a sixty minute period. No internal moisture or fogging of lenses shall be observed

(e.1) Evaluation. Two out of three (both right and left telescopes) bid samples must pass this requirement or a failure is recorded.

(f) PS paragraph 6.10 Antireflection Device (ARD). Requirement: objective assembly of the binocular shall include an ARD provided by Tenebraex, Corp (See Note 6.10 of PS) and shall attach and detach without the use of tools (fingers only) and shall take no more than 30 seconds per system to attach and remove at room temperature. Note - Only one pair of ARDs is required for each type of bid sample binocular; for example: three M22 binocular bid samples, only a single ARD pair for the M22 bid samples is required.

(f.1) Evaluation. Both telescopes of one bid sample must pass this requirement or a failure is recorded.

1.2 Bid Sample Evaluation Criteria:

1.2.1 A recorded failure in any of the above requirements, except as indicated above, will terminate the evaluation of an offeror's bid samples and proposal.

1.2.2 ARD. An ARD bid sample failure will increase the overall risk rating of the offeror's proposal.

Attachment 005

DEPARTMENT OF DEFENSE
CONTRACT SECURITY CLASSIFICATION SPECIFICATION

(The requirements of the DoD Industrial Security Manual apply to all security aspects of this effort.)

1. CLEARANCE AND SAFEGUARDING

a. FACILITY CLEARANCE REQUIRED: SECRET

b. LEVEL OF SAFEGUARDING REQUIRED: SECRET

2. THIS SPECIFICATION IS FOR: *(X and complete as applicable)*

	a. PRIME CONTRACT NUMBER		
	b. SUBCONTRACT NUMBER		
	c. SOLICITATION OR OTHER NUMBER: DAAE20-00R-0062	Due Date (YYMMDD): 000515	

3. THIS SPECIFICATION IS: *(X and complete as applicable)*

X	a. ORIGINAL *(Complete date in all cases)*		Date (YYMMDD): 000127
	b. REVISED *(Supersedes all previous specs)*	Revision No.	Date (YYMMDD):
	c. FINAL *(Complete item 5 in all cases)*		Date (YYMMDD):

4. IS THIS A FOLLOW-ON CONTRACT? [ ] YES [X] NO. If Yes, complete the following:

Classified material received or generated under _____ *(Preceding Contract Number)* is transferred to this follow-on contract.

5. IS THIS A FINAL DD FORM 254? [ ] YES [X] NO. If Yes, complete the following:

In response to the contractor's request dated _____, retention of the classified material is authorized for the period _____

6. CONTRACTOR *(Include Commercial and Government Entity (CAGE) Code)*

a. NAME, ADDRESS, AND ZIP CODE	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE *(Name, Address, and Zip Code)*
TO BE DETERMINED AT TIME OF CONTRACT AWARD		

7. SUBCONTRACTOR

a. NAME, ADDRESS, AND ZIP CODE	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE *(Name, Address, and Zip Code)*

8. ACTUAL PERFORMANCE

a. LOCATION	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE *(Name, Address, and Zip Code)*

9. GENERAL IDENTIFICATION OF THIS PROCUREMENT

M22 BINOCULAR

10. CONTRACTOR WILL REQUIRE ACCESS TO:	YES	NO
a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION		X
b. RESTRICTED DATA		X
c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION		X
d. FORMERLY RESTRICTED DATA		X
e. INTELLIGENCE INFORMATION		
(1) Sensitive Compartmented Information (SCI)		X
(2) Non-SCI		X
f. SPECIAL ACCESS INFORMATION		X
g. NATO INFORMATION		X
h. FOREIGN GOVERNMENT INFORMATION		X
i. LIMITED DISSEMINATION INFORMATION		X
j. FOR OFFICIAL USE ONLY INFORMATION		X
k. OTHER *(Specify)*		

11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:	YES	NO
a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY		X
b. RECEIVE CLASSIFIED DOCUMENTS ONLY		X
c. RECEIVE AND GENERATE CLASSIFIED MATERIAL	X	
d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE		X
e. PERFORM SERVICES ONLY		X
f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES		X
g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER		X
h. REQUIRE A COMSEC ACCOUNT		X
i. HAVE TEMPEST REQUIREMENTS		X
j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS		X
k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE		X
l. OTHER *(Specify)*		

12. PUBLIC RELEASE. Any information (cl[illegible]ed or unclassified) pertaining to this contract shall not be released f[illegible]blic dissemination except as provided by the Industrial Security Manual or

[ ] Direct [X] Through (Specify)

Commander, U.S. Army TACOM-ARDEC
Attn: AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07801-5000

to the Directorate for Freedom of Information and Security Review, Office of the Assistant Secretary of Defense (Public Affairs)* for review.
*In the case of non-DoD User Agencies, requests for disclosure shall be submitted to that agency.

13. SECURITY GUIDANCE. The security classification guidance needed for this classified effort is identified below. If any difficulty is encountered in applying this guidance or if any of contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes; to challenge the guidance or the classificat assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending fi decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. *(Fill in as appropriate for the classified effort. Attach, or forward*

SCG: SCG for Laser Protection Materiel, issued by U.S.Army CECOM

DECLASSIFY: Appendix D, CECOM Pamphlet 380-3, dated 15 January 1996, Directorate for Intelligence and Information Security, U.S. Army, CECOM.

DATE OF SOURCE: FEB 4, 1997

Classified material must be handled per the National Industrial Security Program Operating Manual (NISPOM) DOD 5220.22-M (JAN 95)

00-012

CONCURRENCE: [signature]
Peter R. Lawson
Security Specialist
Security Division

14. ADDITIONAL SECURITY REQUIREMENTS. Requirements, in addition to ISM requirements, are established for this contract. *(If Yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.)* [X] Yes [ ] No

Laser Protection is a military sensitive critical technology and under ABCA STANO 11493/11494, the United Kingdom is the only foreign country that may receive the Classified addendum to the attached solicitation.

15. INSPECTIONS. Elements of this contract are outside the inspection responsibility of the cognizant security office. *(If Yes, explain and identify specific areas)* [ ] Yes [X] No

16. CERTIFICATION AND SIGNATURE. Security requirements stated herein are complete and adequate for safeguarding the classified information t be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL	b. TITLE	c. TELEPHONE (Include Area Code)
Louis S. Herczeg, Jr	Physicist	973-724-6276

d. ADDRESS (Include Zip Code)
Commander, U.S. Army TACOM-ARDEC
ATTN: AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07801-5000

e. SIGNATURE
Louis S Herczeg

17. REQUIRED DISTRIBUTION

- [X] a. CONTRACTOR
- [X] b. SUBCONTRACTOR
- [X] c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR
- [X] d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION
- [X] e. ADMINISTRATIVE CONTRACTING OFFICER
- [X] f. OTHERS AS NECESSARY AMSTA-AR-DSI-S

DEPARTMENT OF DEFENSE
CONTRACT SECURITY CLASSIFICATION SPECIFICATION

(The requirements of the DoD Industrial Security Manual apply to all security aspects of this effort.)

1. CLEARANCE AND SAFEGUARDING

a. FACILITY CLEARANCE REQUIRED: SECRET

b. LEVEL OF SAFEGUARDING REQUIRED: SECRET

2. THIS SPECIFICATION IS FOR: *(X and complete as applicable)*

	a. PRIME CONTRACT NUMBER		
	b. SUBCONTRACT NUMBER		
	c. SOLICITATION OR OTHER NUMBER: DAAE20-00R-0062	Due Date (YYMMDD): 000515	

3. THIS SPECIFICATION IS: *(X and complete as applicable)*

X	a. ORIGINAL *(Complete date in all cases)*		Date (YYMMDD): 000127
	b. REVISED *(Supersedes all previous specs)*	Revision No.	Date (YYMMDD):
	c. FINAL *(Complete item 5 in all cases)*		Date (YYMMDD):

4. IS THIS A FOLLOW-ON CONTRACT? [ ] YES [X] NO. If Yes, complete the following:

Classified material received or generated under _____ *(Preceding Contract Number)* is transferred to this follow-on contract.

5. IS THIS A FINAL DD FORM 254? [ ] YES [X] NO. If Yes, complete the following:

In response to the contractor's request dated _____, retention of the classified material is authorized for the period _____

6. CONTRACTOR *(Includes Commercial and Government Entity (CAGE) Code)*

a. NAME, ADDRESS, AND ZIP CODE	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE *(Name, Address, and Zip Code)*
TO BE DETERMINED AT TIME OF CONTRACT AWARD		

7. SUBCONTRACTOR

a. NAME, ADDRESS, AND ZIP CODE	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE *(Name, Address, and Zip Code)*

8. ACTUAL PERFORMANCE

a. LOCATION	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE *(Name, Address, and Zip Code)*

9. GENERAL IDENTIFICATION OF THIS PROCUREMENT

M24 MINI BINOCULAR

10. CONTRACTOR WILL REQUIRE ACCESS TO:	YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:	YES	NO
a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION		X	a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY		X
b. RESTRICTED DATA		X	b. RECEIVE CLASSIFIED DOCUMENTS ONLY		X
c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION		X	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL	X	
d. FORMERLY RESTRICTED DATA		X	d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE		X
e. INTELLIGENCE INFORMATION			e. PERFORM SERVICES ONLY		X
(1) Sensitive Compartmented Information (SCI)		X	f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES		X
(2) Non-SCI		X	g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER		X
f. SPECIAL ACCESS INFORMATION		X	h. REQUIRE A COMSEC ACCOUNT		X
g. NATO INFORMATION		X	i. HAVE TEMPEST REQUIREMENTS		X
h. FOREIGN GOVERNMENT INFORMATION		X	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS		X
i. LIMITED DISSEMINATION INFORMATION		X	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE		X
j. FOR OFFICIAL USE ONLY INFORMATION		X	l. OTHER *(Specify)*		
k. OTHER *(Specify)*					

12. **PUBLIC RELEASE.** Any information (classified or unclassified) pertaining to this contract shall not be released for public dissemination except as provided by the Industrial Security Manual or

[ ] Direct [X] Through (Specify)

Commander, U.S. Army TACOM-ARDEC
Attn: AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07801-5000

to the Directorate for Freedom of Information and Security Review, Office of the Assistant Secretary of Defense (Public Affairs)* for review.
*In the case of non-DoD User Agencies, requests for disclosure shall be submitted to that agency.

13. **SECURITY GUIDANCE.** The security classification guidance needed for this classified effort is identified below. If any difficulty is encountered in applying this guidance or if any of contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes; to challenge the guidance or the classificat assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending fi decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. *(Fill in as appropriate for the classified effort. Attach, or forward*

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DECLASSIFY: Appendix D, CECOM Pamphlet 380-3, dated 15 January 1996, Directorate for Intelligence and Information Security, U.S. Army, CECOM.

DATE OF SOURCE: FEB 4, 1997

Classified material must be handled per the National Industrial Security Program Operating Manual (NISPOM) DOD 5220.22-M (JAN 95)

00-011

CONCURRENCE: Peter R Lawson
Peter R. Lawson
Security Specialist
Security Division

14. **ADDITIONAL SECURITY REQUIREMENTS.** Requirements, in addition to ISM requirements, are established for this contract. *(If Yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.)* [X] Yes [ ] No

Laser Protection is a military sensitive critical technology and under ABCA STANO 11493/11494, the United Kingdom is the only foreign country that may receive the Classified addendum to the attached solicitation.

15. **INSPECTIONS.** Elements of this contract are outside the inspection responsibility of the cognizant security office. *(If Yes, explain and identify specific areas)* [ ] Yes [X] No

16. **CERTIFICATION AND SIGNATURE.** Security requirements stated herein are complete and adequate for safeguarding the classified information t be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL	b. TITLE	c. TELEPHONE (Include Area Code)
Louis S. Herczeg, Jr	Physicist	973-724-6276

d. ADDRESS (Include Zip Code)
Commander, U.S. Army TACOM-ARDEC
ATTN: AMSTA-AR-FSF-R
Picatinny Arsenal, NJ 07801-5000

e. SIGNATURE
Louis S Herczeg Jr

17. **REQUIRED DISTRIBUTION**

X	a. CONTRACTOR
X	b. SUBCONTRACTOR
X	c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR
X	d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION
X	e. ADMINISTRATIVE CONTRACTING OFFICER
X	f. OTHERS AS NECESSARY AMSTA-AR-DSI-S

DD Form 254 Reverse, DEC 90

Attachment 006

DOCUMENT SUMMARY LIST

Item: M22 & M24 BINOCULARS
NSN:
Control Number/PRON: P10SRA01,02

Identifies all first tier documents (cited in SOW) (applicable DIDs). Also included are all referenced documents (2nd, (includes DID block 10 references), 3rd and lower tier) which have been tailored.

DOCUMENT CATEGORY:

CATEGORY O - Unless otherwise specified in the solicitation, contract, or contract modifications, all documents are for guidance and information only.

CATEGORY 1 - The requirements contained in the directly cited document are contractually applicable to the extent specified. All referenced documents are for guidance and information only.

CATEGORY 2 - The requirements contained in the directly cited document and the reference documents identified in the directly cited document are contractually applicable to the extent specified. All subsequently referenced documents are for guidance and information only.

CATEGORY 3 - Unless otherwise specified in the solicitation, contract or contract modification, all requirements contained in the directly cited document and all reference and subsequently referenced documents are contractually applicable to the extent specified.

Document Number (Contract Reference) Applicable Tailoring	Document Title	Document Date/ Document Category
1a. NCSL Z540-1 (ES7010)	General Requirements for Calibration Laboratories and Measuring and Test Equipment	30 Aug 94
	OR	
ISO 10012-1 (ES7010)	Quality Assurance Requirements for Measuring Equipment, Part 1: Metrological Confirmation System	1992
1b. DI-QCIC-81006 (DD Form 1423)	Special Inspection Equipment Descriptive Documentation	11 Sep 89 Cat 1
2. MIL-PRF-13830 Rev B	Optical Components For Fire Control Instruments; Gen.Spec.	09 Jan 97 Cat 2

DOCUMENT SUMMARY LIST

Item: M22 & M24 BINOCULARS
NSN:
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ATTACHMENT 007

Proposal Submission
Small Business Participation

All offerors, both Small and Large Business, are required to submit Small Business Participation Proposals - This format is optional

Offeror's Name_____
Company Size: _____**Small Business (SB)** _____**Large Business (LB)**
Company Status: (IF): _____**SB,** _____ **Historically Underutilized Business Zone Small Business (HUBZone SB) ,** _____ **Small Disadvantaged Business (SDB)** _____ **Woman-Owned Small Business (WOSB) or** ___ **Historically Black College and University/Minority Institution (HBCU/MI)** _____**Veteran-Owned Small Business** _____**Service-Disabled Veteran-Owned Small Business**

Total Estimated Value of Proposed Contract: $_____
Total Estimated Value of Subcontracts: $_____

Dollar Value of Subcontracts planned for all:
SBs: $_____
Company name(s)_____
HUBZone SBs: $_____
Company name(s) _____
SDBs: $ _____
Company name(s)_____
WOSBs: $_____
Company name(s)_____
HBCU/MIs: $_____
Institution name(s)_____
Veteran-Owned SBs: $_____
Company name(s)_____
Service-Disabled Veteran-Owned SBs: $_____
Company name(s)_____

Percentages of Contract Value subcontracted for all:
SB: %_____
HUBZone SB: %_____
SDB: %_____
WOSB:%_____
HBCU/MI: %_____

VOSB: %_____
SDVOSB %_____

For SBs, VOSBs, SDVOSBs, HUBZone SBs, SDBs, or WOSBs – Offeror's percentage of contract value you will perform at the prime contract level:
%_____

Principle supplies/services to be subcontracted to:
SB:_____
HUBZone SB:_____
SDB:_____
WOSB:_____
HBCU/MI: _____
VOSB:_____
SDVOSB:_____

Principle supplies/services you will be providing at the prime contractor level (in house):_____
_____
_____
_____
_____

During the *past three calendar years*, provide the following:

Description of your methods employed to promote the use of SBs, VOSBs, SDVOSBs, HUBZone SBs, SDBs, WOSBs, and HBUC/MI's:

_____
_____
_____

Description of the internal methods used to monitor your utilization of the above (database mgmt, reports, etc.):_____
_____
_____