

## NOTES:

## 1. OPTICAL CHARACTERISTICS

## 1.1 MAGNIFICATION (VARIABLE)

1.1.1 3.0 POWER  $\pm .25$  TO 9 POWER  $\pm .5$ 

## 2. OPTICAL REQUIREMENTS:

2.1 PARALLAX: FOCUS PARALLAX BETWEEN CENTER OF THE RETICLE AND IMAGE OF A TARGET AT 300 METERS  $\pm 20$  METERS SHALL NOT EXCEED 1/2 MINUTE AT 6X, 3/4 MINUTE AT 6X, AND 3/4 MINUTE AT 3.0X (AZIMUTH AND ELEVATION KNOBS SET AT MIDPOINT OF TRAVEL).2.2 LINE OF SIGHT SHIFT: WHEN VIEWING A TARGET AT 300 METERS  $\pm 20$  METERS THE SHIFT IN THE LINE OF SIGHT AT THE 6X AND 9X POSITIONS SHALL NOT EXCEED 1/2 MINUTE RELATIVE TO THE LINE OF SIGHT POSITION AT 3.0X (\*) APPLIES.

2.3 RESOLUTION: AT THE CENTER OF THE FIELD OF VIEW THE TELESCOPE SHALL RESOLVE 1/6 MINUTE AT 9 POWER, 1/4 MINUTE AT 6 POWER, AND 1/3 MINUTE AT 3.0 POWER. THE EYEPiece SHALL BE ADJUSTED FOR BEST FOCUS AND NO AUXILIARY MAGNIFICATION SHALL BE USED (AZIMUTH AND ELEVATION KNOBS SET AT MIDPOINT OF TRAVEL).

2.4 AZIMUTH AND ELEVATION ADJUSTMENT: WITH THE LINE OF SIGHT ORIGINALLY PARALLEL (WITHIN 3 MINUTES) TO THE MECHANICAL AXIS OF THE TELESCOPE, THE EXTREME ROTATION OF THE AZIMUTH AND ELEVATION KNOBS SHALL CHANGE THE LINE OF SIGHT BY A MINIMUM OF 23 MINUTES OF ARC IN BOTH DIRECTIONS. (MAGNIFICATION SET AT 3.0 POWER.)

2.5 DIOPTR ADJUSTMENT: USING A DIOPTR METER THE EYEPiece ADJUSTMENT SHALL PROVIDE AT LEAST PLUS 1.0 DIOPTERS AND MINUS 1.0 DIOPTERS FROM THE POSITION OF BEST FOCUS ON THE RETICLE SURFACE, ESTABLISHED BY USING A DIOPTR METER SET FOR ZERO DIOPTERS.

2.6 COATINGS: ALL LENS SURFACES SHALL BE COATED WITH AN ANTI-REFLECTION COATING OF MAGNESIUM FLUORIDE.

## 2.7 CLEANLINESS:

2.7.1 THERE SHALL BE NO EVIDENCE OF GLASS FRACTURE, LEMENT SEPARATION, GREASE, OR FINGERPRINTS ON ANY OPTICAL COMPONENT WHEN SIGHTING THRU THE OBJECTIVE OR EYE END OF THE TELESCOPE.

2.7.2 WHEN VIEWING FROM THE EYE END OF THE TELESCOPE THERE SHALL NOT BE MORE THAN 3 PARTICLES OF DIRT VISIBLE ON THE RETICLE SURFACE. IN ADDITION, NO PARTICLE SHALL EXCEED THE APPARENT WIDTH OF A RETICLE LINE. THIS CHECK SHALL BE PERFORMED AT BOTH THE 3.0 POWER AND 9 POWER POSITIONS.

## 2.8 GLASS OPTICS

2.8.1 THE OPTICAL GLASS SHALL MEET THE REQUIREMENT OF GRADE C OF SPECIFICATION MIL-G-174.

2.8.2 DIGS AND SCRATCHES AS DESCRIBED IN PARAGRAPH 3.5.2 AND 3.5.3 OF SPECIFICATION MIL-G-13930 SHALL BE IN ACCORDANCE WITH PARAGRAPH 3.5.5.

## 3. ENVIRONMENTAL REQUIREMENTS:

## 3.1 PRESSURE TEST

3.1.1 SCOPE TO BE PRESSURIZED TO 1.3 P.S.I.G. TO 70°F. (ROOM TEMPERATURE). NO PRESSURE DROP PERMITTED FOR 20 SECONDS.

## 3.2 FOGGING TEST

3.2.1 WITH SCOPE SUBMERGED IN WATER AT 130°F. FOR 20 SECONDS, NO MOISTURE SHALL BE VISIBLE ON ANY INTERNAL SURFACE OF TELESCOPE.

## 3.3 TORQUE TEST (70°F)

3.3.1 TORQUES REQUIRED TO TURN ELEVATION AND WINDAGE KNOBS TO BE 1 1/2 IN. LBS. TO 3.0 IN. LBS.

3.3.2 TORQUE REQUIRED TO TURN POWER RING TO BE 3 IN. LBS. TO 10 IN. LBS.

3.4 ADJUSTABLE EYEPiece, ELEVATION AND WINDAGE KNOBS AND CAM TO BE MANUALLY OPERABLE AT + 10°F. TO + 125°F.

3.5 SHOCK REQUIREMENT: SHOCK IN LONGITUDINAL PLANE, 400 TO 600 G'S PEAK LEVEL. TIME DURATION TO BE 7 TO 1.1 MIL-SECONDS.

EACH TELESCOPE/MOUNT SYSTEM MUST BE CAPABLE OF MEETING THE SHOCK REQUIREMENT FOR A MINIMUM OF 5000 CYCLES.

## 4. PERFORMANCE: WITH THE VERTICAL RETICLE LINE "PLUMB" WITHIN 1 DEGREE AND CAM SET AT 3 POWER POSITION (0-DEGREE REFERENCE).

THE FOLLOWING REQUIREMENTS FOR DEPRESSION OF THE "LINE-OF-SIGHT" AT THE FOLLOWING MAGNIFICATION SETTINGS SHALL BE MET

WHEN ROTATING THE CAM:

MAGNIFICATION	DEPRESSION OF LINE OF SIGHT (MINUTES OF ARC)
3.0X	0
4X	3.1 $\pm$ 1.0 MINUTE
5X	7.8 $\pm$ 1.0 MINUTE
6X	13.1 $\pm$ 1.0 MINUTE
7X	19.1 $\pm$ 1.5 MINUTES
8X	26.0 $\pm$ 1.5 MINUTES
9X	33.8 $\pm$ 2.0 MINUTES

## CARRYING CASE REQUIREMENTS ARE AS FOLLOWS:

WATERTIGHTNESS: THE CASE SHALL SHOW NO EVIDENCE OF WATER PENETRATION WHEN SUBMERGED AND COVERED WITH A MINIMUM OF 3 INCHES TO MAXIMUM OF 6 INCHES OF WATER FOR 5 MINUTES. WATER TEMPERATURE SHALL BE BETWEEN 40°F. AND 75°F.

## 5. MOUNTING REQUIREMENTS: THE TELESCOPE MUST BE CAPABLE OF BEING SECURELY MOUNTED ON A M14MM OR M21 RIFLE TO MEET THE SHOCK REQUIREMENTS OF NOTE 3.5 AND IN ADDITION:

5.1 CENTERLINE OF SCOPE MUST BE 2.0  $\pm$  1/4  $\pm$  0 INCHES ABOVE THE CENTERLINE OF THE RIFLE BORE.5.2 THE EYEPiece OF THE TELESCOPE MUST BE LOCATED 12.0  $\pm$  1/4  $\pm$  0 INCHES FORWARD OF THE BUTT STOCK FACE.

## 6. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

## 7. SUGGESTED SOURCE OF SUPPLY:-

LEATHERWOOD, JAMES M.

ROUTE 1, BOX 111

STEPHENVILLE, TX 76401

P/N 5888-791-1

NSN 1240-01-107-9068

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACES REV - W/CHG NORWES-2010 82-07 2*	82 08 25	W. R. R.
B	NORWES-2025/84-02-10 (ECP W452000/84-03-15)	84 04 26	W. R. R.

## SPECIFICATION CONTROL DRAWING

PART NO. 9349352

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER  
DOVER, NEW JERSEY 07801

TELESCOPE, STRAIGHT

ORIGINAL DATE OF DRAWING	81-11-17	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DRAWN BY	CHECKED BY
DO NOT SCALE DRAWING		TOLERANCES ON DECIMALS $\pm$	ENGR	ENGR
		FRACTIONS $\pm$	ENGR	ENGR
		ANGLES $\pm$		
RIFLE 7.62MM				
8448270	SNIPER'S M21			
NEXT ASSY	USED ON			
APPLICATION				
SCALE	UNIT WT.	SHEET		