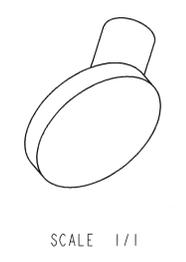
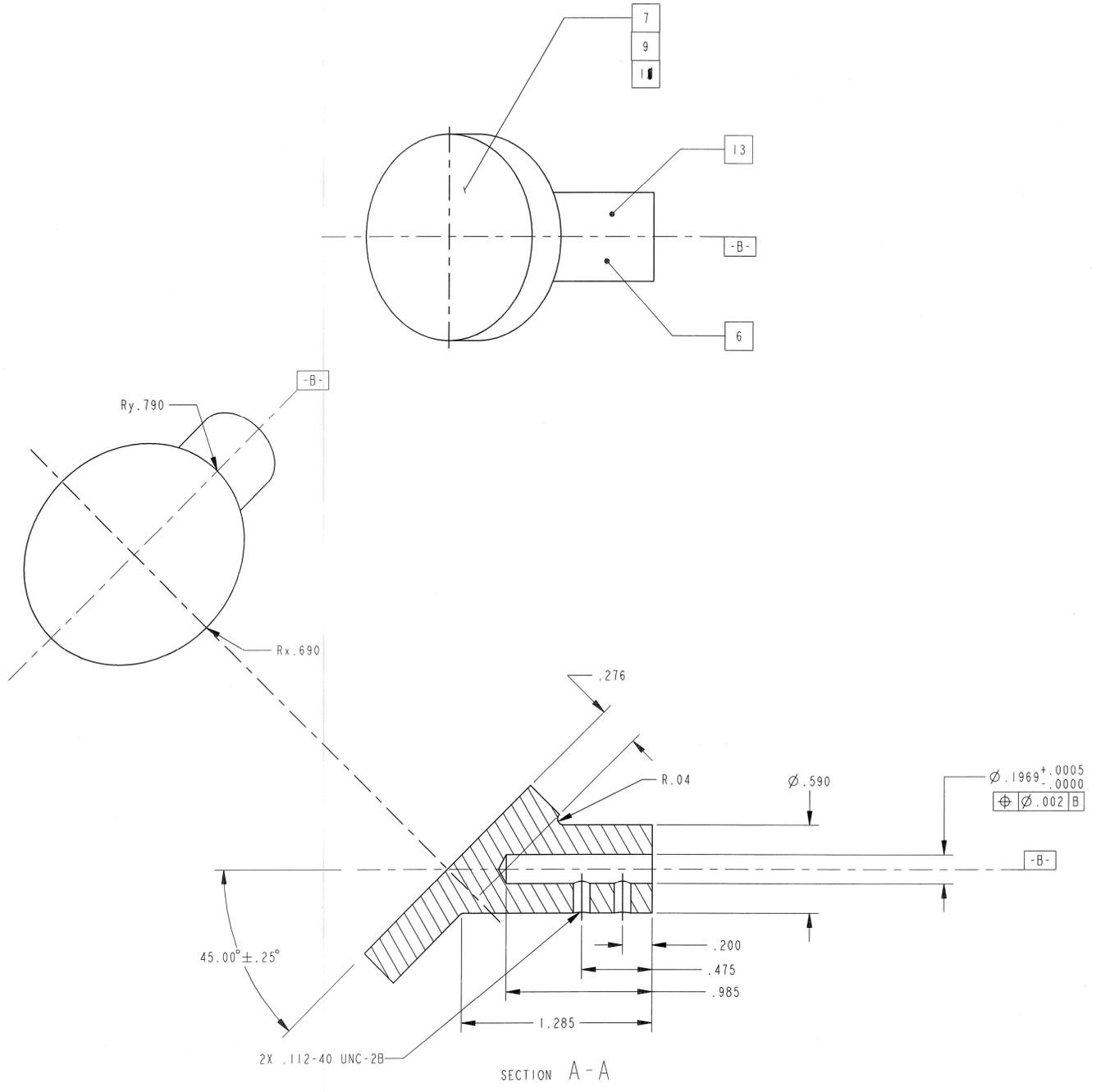


REVISION HISTORY							
ZONE	REV	DESCRIPTION	DRAWN	CHECKED	LEAD ENGR	BRANCH	DATE

NOTES:

1. APPLICABLE STANDARDS/SPECIFICATIONS:
MIL-STD-100, DOD STANDARD PRACTICE FOR ENGINEERING DRAWINGS,
ASME Y14.100M, ENGINEERING DRAWING PRACTICES,
MIL-T-31000, TECHNICAL DATA PACKAGES.
2. BREAK ALL SHARP EDGES AND REMOVE ALL BURRS
.010 MAX CHAMFER OR RADIUS.
3. NON-OPTICAL SURFACE ROUGHNESS SHALL BE 125 μin RMS OR BETTER
UNLESS SPECIFIED OTHERWISE
4. DIMENSIONS APPLY AFTER SURFACE TREATMENT(S)
5. PERFORM HEAT TREAT AND THERMAL STABILIZATION PROCESSES AS FOLLOWS:
 - A. ROUGH MACHINE MIRROR TO NEAR FINAL DIMENSIONS SUFFICIENTLY
OVERSIZED TO ALLOW FOR DIMENSIONAL CHANGES DUE TO HEAT
TREATMENT PROCESSES
 - B. ANNEAL MIRROR AT 520 DEG C +/- 5 DEG C FOR ONE HOUR IN ACCORDANCE WITH
AMS 2770. QUENCH IN A 20-25% AQUEOUS SOLUTION OF POLYALKYLENE
GLYCOL AT ROOM TEMPERATURE. THE MIRROR SHALL BE PLACED INTO THE
SOLUTION WITHIN 15 SECONDS MAXIMUM FROM THE FURNACE IN SUCH A
MANNER SO AS TO PREVENT ENTRAPPED AIR
 - C. AGE MIRROR AT 205 DEG C +/- 5 DEG C FOR 10 HOURS FOLLOWED BY AIR
COOLING TO LESS THAN 35 DEG C IN A CLOSED OVEN WITH STILL AIR
HAVING ACCESS TO ALL SURFACES
 - D. FINISH MACHINE TO FINAL DIMENSIONS EXCLUDING DIAMOND TURNED
SURFACES
 - E. RE-AGE MIRROR AT 177 DEG C +/- 5 DEG C FOR 4 HOURS FOLLOWED BY AIR
COOLING TO LESS THAN 35 DEG C IN A CLOSED OVEN WITH STILL AIR HAVING
ACCESS TO ALL SURFACES
 - F. PERFORM STRESS STABILIZATION AFTER FINISH MACHINING AND PRIOR
TO DIAMOND TURNING AS FOLLOWS:
 1. COOL TO -59 DEG C +/- 6 DEG C, HOLD AT -59 DEG C FOR ONE HOUR
 2. HEAT TO 100 DEG C +/- 6 DEG C, HOLD AT 100 DEG C FOR ONE HOUR
 3. COOL TO 20 DEG C +/- 6 DEG C, HOLD AT 20 DEG C FOR ONE HOUR
MINIMUM
 4. REPEAT STEPS 1 THRU 3 FOR 5 CYCLES. RATE OF COOLING
AND HEATING NOT TO EXCEED 3 DEG C PER MINUTE
6. CHROMATE CONVERSION COAT IN ACCORDANCE WITH MIL-C-5541, CL 1A PRIOR
TO FINISH OF OPTICAL SURFACES
7. DIAMOND TURNED SURFACE SHALL BE ELECTROLESS NICKEL PLATED PER AMS2404F
PRIOR TO FINISH OF OPTICAL SURFACE. NICKEL PLATING THICKNESS SHALL BE
.001 MIN/.003 MAX AFTER DIAMOND TURNING BEFORE GOLD PLATING
8. CLEAR APERTURE SHALL BE 0.040 FROM EDGE
9. INDICATED SURFACE SHALL BE FLAT WITHIN 8 FRINGES POWER
AND 2 FRINGES IRREGULARITY AT 633 nm WHEN TESTED IN A
SINGLE PASS CONFIGURATION WITHIN THE CLEAR APERTURE
10. SURFACE ROUGHNESS SHALL BE DETERMINED BY MEASUREMENTS AT 3
LOCATIONS THAT ARE SPACED EQUALLY ACROSS THE CLEAR APERTURE
ALONG A PLANE THAT RUNS THROUGH THE OPTICAL AXIS. THE AVERAGE
OF THE MEASUREMENTS SHALL NOT EXCEED 40 ANGSTROMS RMS,
WITH NO ONE MEASUREMENT EXCEEDING 120 ANGSTROMS RMS.
SCRATCH AND DIG [40 & 20] IN ACCORDANCE WITH MIL-F-48616 IS PERMITTED
11. COAT OPTICAL SURFACES IN ACCORDANCE WITH MIL-F-48616 AS FOLLOWS:
 - A. COAT CLEAR APERTURE WITH REFLECTIVE COATING AND PROTECTIVE
OVERCOAT AS FOLLOWS:
 1. WAVELENGTH BAND: 5 TO 50 MICRONS
 2. THE AVERAGE REFLECTANCE SHALL BE GREATER THAN 98% OVER
THE WAVELENGTH BAND AT ANGLES OF INCIDENCE BETWEEN 42°
AND 48°. THE MINIMUM REFLECTANCE WITHIN THE WAVELENGTH
BAND AND RANGE OF ANGLES OF INCIDENCE SHALL BE GREATER THAN 96%
 - B. THE COATING SHALL BE SUBJECT TO THE HUMIDITY, MODERATE ABRASION,
AND ADHESION TESTS OF MIL-F-48616, EXCEPT SEQUENCE OF TEST SHALL BE
HUMIDITY, MODERATE ABRASION, AND ADHESION
 - C. REFLECTANCE TESTS SHALL BE PERFORMED AT 45° ANGLE OF INCIDENCE
 - D. FOR THE PURPOSE OF JUDGING COATINGS IN ACCORDANCE WITH MIL-F-48616,
THE CLEAR APERTURE OF A WITNESS SAMPLE SHALL BE DEFINED AS A
CENTRAL REGION OF THE COATED SURFACE HAVING DIMENSIONS 80% OF
THE OUTSIDE DIMENSIONS OF THE SAMPLE SURFACE
 - E. REFLECTANCE TRACES AND ONE WITNESS SAMPLE SHALL ACCOMPANY
HARDWARE FOR EACH COATING RUN
12. PACKAGE IN ACCORDANCE WITH MIL-F-48616. INTERMEDIATE PACKAGES AND
SHIPPING CONTAINERS SHALL BE MARKED WITH "CAUTION: PRECISION OPTICAL
PART. DO NOT OPEN INDIVIDUAL UNIT CONTAINERS IN RECEIVING." ATTACH ALL
PACKING SLIPS, INVOICES, ETC., ON OUTSIDE OF PACKAGING
13. IDENTIFY IN ACCORDANCE WITH MIL-STD-130, METHOD AND TYPE OPTIONAL.
LOCATE APPROXIMATELY WHERE SHOWN, RADIAL POSITION OPTIONAL. INCLUDE
PART NUMBER, DASH NUMBER, AND SERIAL NUMBER BEGINNING WITH SERIAL
NUMBER 001



-1		SCENE SELECT MIRROR		AL ALLOY 6061-T651 AMS QQ-A-200/8		I	
QTY REQD	CAGE CODE	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION		MATERIAL SPECIFICATION	ITEM NO.	
PARTS LIST							
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES DECIMALS ANGULAR .XX ± .03 .X ± .5° .XXX ± .010 .X ± .5° DO NOT SCALE DRAWING				CONTRACT NO.		NATIONAL AERONAUTICS & SPACE ADMINISTRATION LANGLEY RESEARCH CENTER HAMPTON, VA 23681-2199	
TREATMENT		APPROVALS		DATE		TITLE	
5		C.M. BOYER		04-Nov-10		SCENE SELECT MIRROR IR INSTRUMENT ASSY CLARREO	
FINISH		DESIGNER		DATE		SIZE	
6 7 11		LB1007		11/11/2010		D 25305	
SIMILAR TO		SPECIAL MARKING SYM		SCALE		DWS. NO.	
13		13		2/1		1251773	
PART DASH NO.		NEXT FINAL		NEXT ASSY		USED ON	
1		1		TBD		CLARREO	
QTY REQD PER ASSY		APPLICATION		DRAWN		CHECKED	
				C.M. BOYER		11/11/2010	
				LEAD ENGR		11 Nov 2010	
				BRANCH		SCALE 2/1	
				SHEET		1 OF 1	