

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF A SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

No.: NR-0155-S-112-S

DATE: March 7, 2006

PAGE 1 OF 2

SOURCE TYPE: Radioluminous Lamp

MODEL: 11733738

MANUFACTURER/DISTRIBUTOR: Department of the Army
U.S. Army TACOM Life Cycle
Management Command
AMSTA-CS-CZR
(Previously U.S. Army Tank-
Automotive & Armaments Command)
Rock Island, IL 61299-7630

ISOTOPE:

Hydrogen-3

MAXIMUM ACTIVITY:

0.03 Curie (1.11 GBq)

LEAK TEST FREQUENCY:

As specified in the user's materials
license

PRINCIPAL USE: (R) Gas Sources

For use in the Model M64 and M64A1 sight units

CUSTOM SOURCE: YES NO

CUSTOM USER: U.S. Department of Defense

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DIAGRAM:

See Attachments 1 & 2.

REFERENCES:

The following supporting documents for the Model 11733738 radioluminous lamp are hereby incorporated by reference and are made a part of this registry document.

- Department of the Army letter dated March 20, 1995, requesting changes to specific certificates, and letters dated January 22, 2001, May 23, 2001, and March 24, 2004, with enclosures thereto.
- Department of the Army email received September 23, 2005, with enclosures thereto.
- Department of the Army facsimile dated December 12, 2005, with enclosures thereto.
- U.S. Department of the Army License No. 12-00722-06.

ISSUING AGENCY:

US Nuclear Regulatory Commission

Date: March 7, 2006

Reviewer: Tomas Herrera
Tomas Herrera

Date: March 7, 2006

Concurrence: John P. Jankovich
John P. Jankovich

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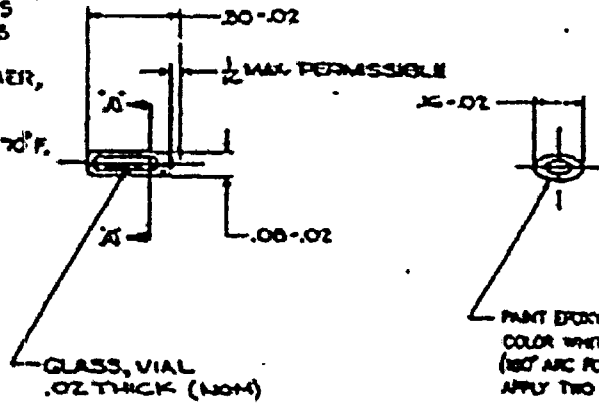
DATE: March 7, 2006

ATTACHMENT 1 OF 2

REQUIREMENTS:

2. THERE SHALL BE NO EVIDENCE OF PHYSICAL FAILURE SUCH AS FRACTURING OR LIGHT LOSS DUE TO EXPOSING THE LAMP TO -80°F AND +120°F FOR A PERIOD OF 8 HOURS AT EACH TEMPERATURE.
3. AFTER SUBMERGING THE LAMP IN ROOM TEMPERATURE WATER FOR 4 HOURS, RADIOACTIVE CONTENT OF THE WATER SHALL NOT EXCEED .0105 MICROCURIE.
4. VIAL TO BE FILLED WITH TRITUM (4%) OF 99% PURITY TYPICAL DOES EXCEEDS MAXIMUM.
5. PRIOR TO MAKING BRIGHTNESS MEASUREMENTS, LAMPS SHALL BE ALLOWED TO STABILIZE FOR A PERIOD OF 25 DAYS FROM MANUFACTURE.
6. FOLLOWING THE STABILIZATION PERIOD AND UP TO 120 DAYS FROM DATE OF MANUFACTURE, BRIGHTNESS MEASUREMENTS SHALL NOT SHOW A DECAY IN EXCESS OF 2.5% WHEN MEASURED OVER ANY CONSECUTIVE 30 DAY PERIOD. FURTHER, THE FINAL BRIGHTNESS MEASUREMENT AT TIME OF ACCEPTANCE SHALL BE 325 MCD/LAMBERTS MINIMUM.
7. INTERNAL PRESSURE 2.50 ATMOSPHERES (NOMINAL) AT +70°F.
LAMP OF PHOSPHOR: GREEN
SPECTRAL PEAK $5250 \text{ \AA} \pm 50 \text{ \AA}$,
 $\frac{1}{2}$ PEAK WIDTH $700 \text{ \AA} \pm 50 \text{ \AA}$.

NO.	DESCRIPTION	DATE	APPROVED
KI	REPLACE KEY TO WITH CHANGE FOR PART 11733738	7/20/06	[Signature]
A	NOR F41001/840320	5/27/05	[Signature]
B	NOR F41002/840320	5/27/05	[Signature]
C	NOR F41001/840320 TOP F41002/840320	8/3/07	[Signature]
D	NOR M813005/880422	8/30/07	[Signature]



SUGGESTED SOURCE(S) OF SUPPLY	
VENDOR	VENDOR PART NO
M. B. MICROTEC AG FRIENBURGERSTRASSE 624 CH-8172 - WILDORFBAUGHEN SWITZERLAND	NOT AVAILABLE
SELF POWERED LIGHTING LTD. DOODLEBENT NO. 292183 8 WESTCHESTER PLAZA CLARK FORD, N.Y. 10713	NOT AVAILABLE
SAUNDERS-ROBE DEVELOPMENTS LTD. MILLINGTON ROAD WATFORD MIDDLESEX WD13 4NB ENGLAND	NOT AVAILABLE
BRANDHURST CO. LTD. P.O. BOX 70 HIGH WYCOMBE BUCKINGHAMSHIRE HP12 3PS ENGLAND	NOT AVAILABLE

SOURCE USED ON:
M64 SIGHTUNIT
M64A1 SIGHTUNIT

APPLICABLE DOCUMENTS
S.O.P. 11733738

SECTION A-A
PART No. 11733738

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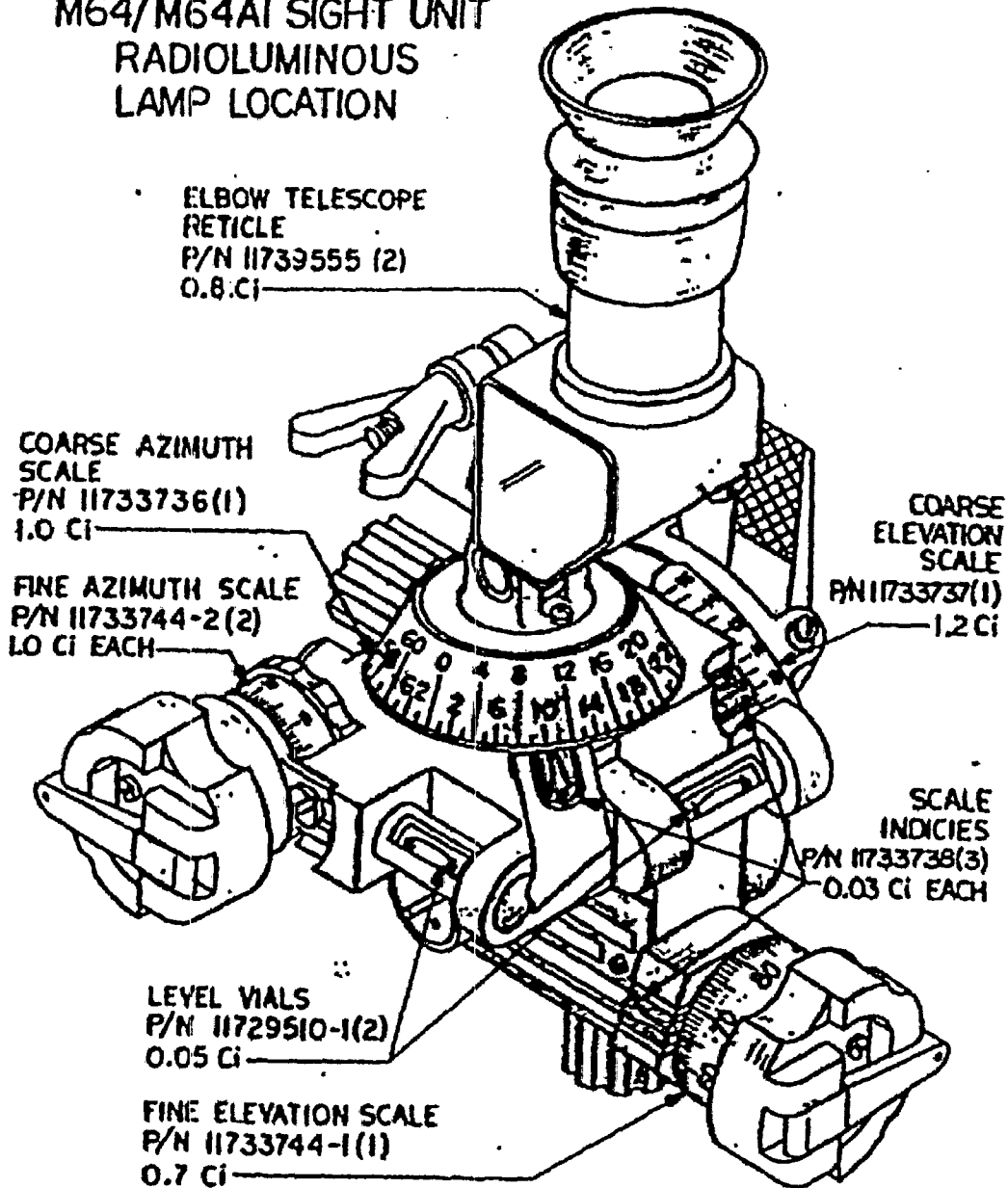
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ATTACHMENT 2 OF 2

M64/M64AI SIGHT UNIT
RADIOLUMINOUS
LAMP LOCATION



TOTAL TRITIUM PER SIGHT UNIT 6.69 CURIES