

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

NO.: NR-0155-S-112-S DATE: December 6, 2005 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: MAXIMUM ACTIVITY:

Hydrogen-3 0.03 Curie (1.11 GBq)

LEAK TEST FREQUENCY: Not Required*

*Users not using the sources under a master material license must have a license condition requiring that area contamination wipe tests are routinely taken of maintenance and storage areas, and whenever breakage of the source is suspected. The routine area contamination wipe tests must be performed at intervals no greater than 3 (three) months.

PRINCIPAL USE: (R) Gas Sources

For use in the Model M64 and M64A1 sight units

CUSTOM SOURCE: X YES NO

CUSTOM USER: U.S. Department of Defense

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SOURCE TYPE: Radioluminous Lamp

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.**
- U.S. Department of the Army License No. 12-00722-06.

ISSUING AGENCY:

US Nuclear Regulatory Commission

Date: December 6, 2005 Reviewer: /RA/
Tomas Herrera

Date: December 6, 2005 Concurrence: /RA/
Ujagar S. Bhachu

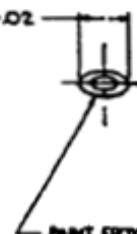
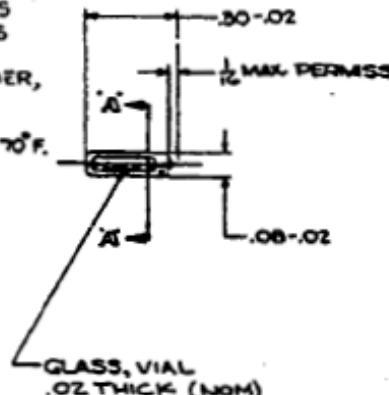
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REQUIREMENTS:

2. THERE SHALL BE NO EVIDENCE OF PHYSICAL FAILURE SUCH AS FRACTURING OR LIGHT LOSS DUE TO EXPOSING THE LAMP TO -80°F AND +150°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 .005 MICROCURIE.
4. VIAL TO BE FILLED WITH TRITIUM (H_3) OF 94% PURITY, TOTAL 600 CURIES 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 MICROLAMBERTS MINIMUM.
7. INTERNAL PRESSURE 2.50 ATMOSPHERES (NOMINAL) AT +70°F.
-OR OF PHOSPHOR: GREEN,
SPECTRAL PEAK 5250 Å ± 50 Å,
 $\frac{1}{2}$ PEAK WIDTH 700 Å ± 50 Å.

ITEM	DESCRIPTION	DATE	REMARKS
A	REPLACES RAY ID WITH CHANGE E&L RIA #X 6057	10-06-00	10-06-00
B	PROTECTIVE SEALING ON PHOSPHOR	10-06-00	10-06-00
C	NOR PAJ2001/840320 (E&L PAJ2002/840324)	00-01-00	00-01-00
D	NOR MIL3005/880422	00-07-00	00-07-00



PAINT EPOXY, SPEC MIL-P 475 TYPE I,
COLOR WHITE MIL-T-285, OF FED-STD-595.
(180° ARC FOR FULL LENGTH OF VIAL,
APPLY TWO COATS (MIN).

SUGGESTED SOURCE(S) OF SUPPLY	
VENDOR	VENDOR PART NO.
M. B. MICROTEC AG FREIBURGSTRASSE 624 CH-8122-WIDDERWANGEN SWITZERLAND	NOT AVAILABLE
SELF POWERED LIGHTING LTD. (CODE IDENT NO. 29218) 8 WESTCHESTER PLAZA ELMSFORD, N.Y. 10523	NOT AVAILABLE
SAUNDERS-HIDE DEVELOPMENTS LTD. MILLINGTON ROAD MAYES MIDDLESEX UB3 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

JARAF 11733738

APPLICABILITY	APPLICABILITY	APPLICABILITY
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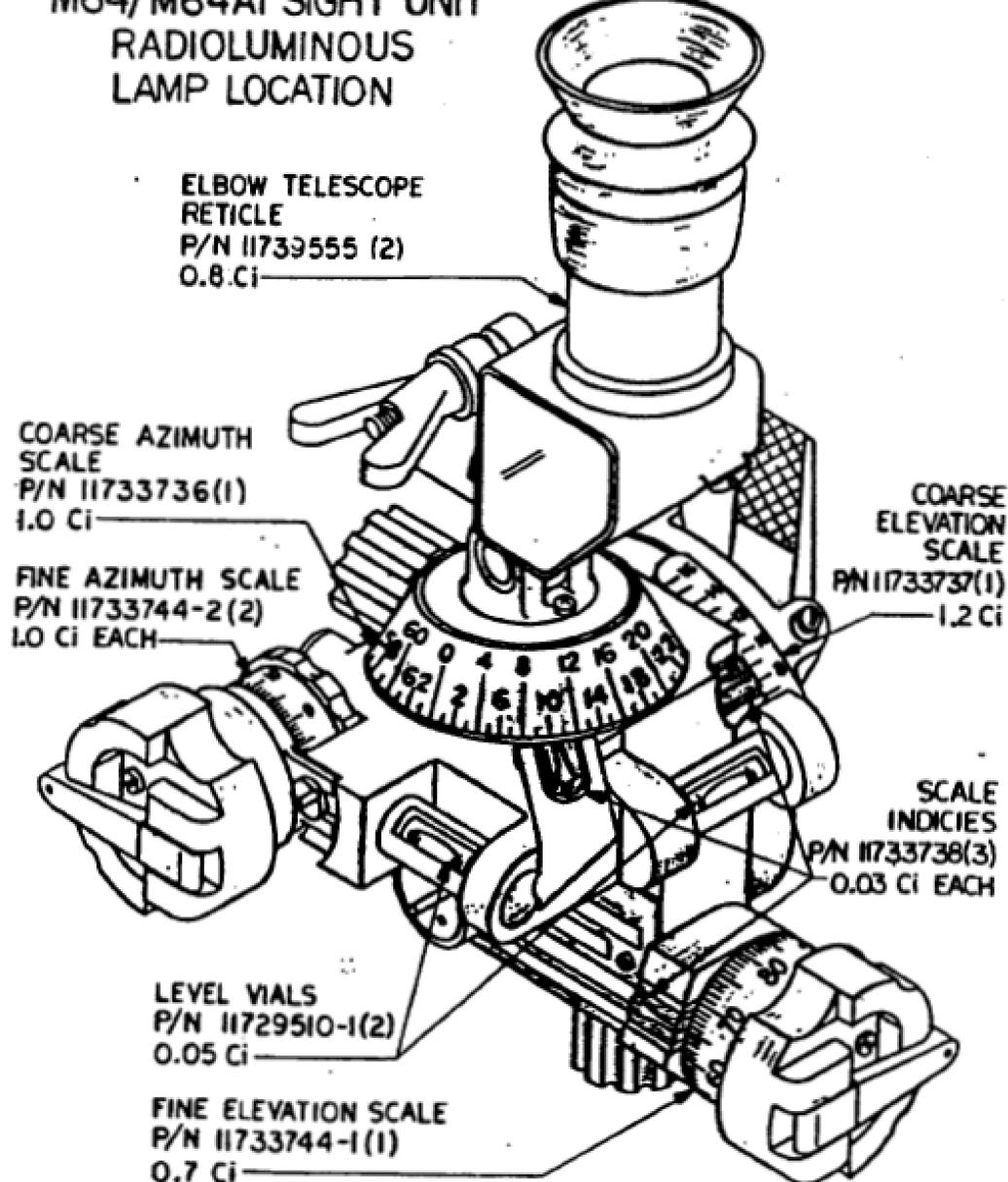
SECTION A-A

CURRENT SOURCE ACTIVITY RATE (MAX RATE)		
INVESTIGATOR, DEVELOPER AND INSPECTOR CENTRE		
TRANSMITTER NUMBER AND ADDRESS		
PART NO. 11733738		
U. S. ARMY TRANSMITTER NUMBER PHILADELPHIA, PA. 19102	LAMP, RADIOLUMINOUS	RECEIVER NO.
74 MAR 11	11733738	TYPE
4C	C	MANUFACTURER
T-3	19200	MANUFACTURE DATE
888	11733738	TEST DATE
2/1	TEST NO.	TEST NO.
M. L. Green	4:1	1:1
K. Polidor	TEST	TEST

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**M64/M64AI SIGHT UNIT
RADIOLUMINOUS
LAMP LOCATION**



TOTAL TRITIUM PER SIGHT UNIT 6.69 CURIES