

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

No.: NR-0155-S-111-S

DATE: March 7, 2006

PAGE 1 OF 2

SOURCE TYPE: Radioluminous Lamp

MODEL: 11733737

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:

1.2 Curies (44.4 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 11733737 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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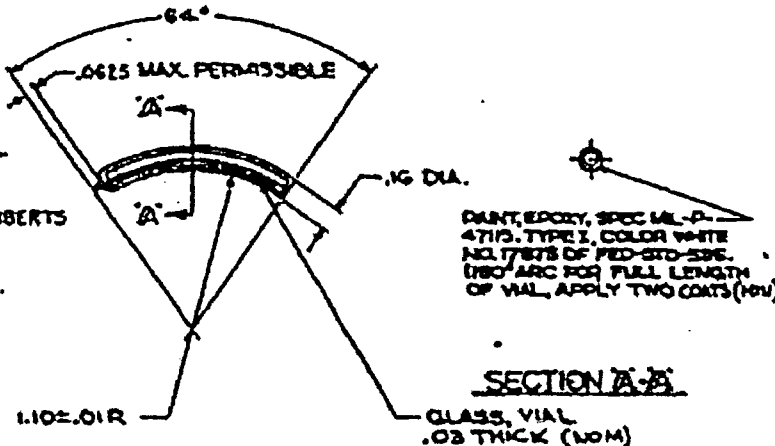
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ATTACHMENT 1 OF 2

**REQUIREMENTS:**

- THERE SHALL BE NO EVIDENCE OF PHYSICAL FAILURE SUCH AS FRACTURING OR LIGHT LOSS DUE TO EXPOSING THE LAMP TO -80°F AND +100°F FOR A PERIOD OF 8 HOURS AT EACH TEMPERATURE.
- AFTER SUBMERGING LAMP IN ROOM TEMPERATURE WATER FOR 4 HOURS RADIOACTIVE CONTENT OF THE WATER SHALL NOT EXCEED .005 MICROCURIE.
- VIAL TO BE FILLED WITH TRITIUM (H3) OF 94% - 96% PURITY. TOTAL 12 CURIES MAXIMUM.
- PRIOR TO MAKING BRIGHTNESS MEASUREMENTS, LAMPS SHALL BE ALLOWED TO STABILIZE FOR A PERIOD OF 25 DAYS FROM MANUFACTURE.
- 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 600 MICROLAMBERTS MIN.
- INTERNAL PRESSURE 2.50 ATMOSPHERES (NOMINAL) AT +70°F.  
A. COLOR OF PHOSPHOR GREEN SPECTRAL PEAK 5250Å ± 30Å.  
B. PEAK WIDTH 700Å ± 30Å.

REV	DESCRIPTION	DATE	BY
1	REPLACES REV 00 WITH CHANGE FROM PERM. PER. 0070	10-3-00	AKB
2	CALCULATION OF LAMP EFF. (CALCULATED)		AKB
A	NOR F01E503, 800212 (ECP F8A504Z, T70109) (ECP F57002, 800212)	02-13-00	AKB
B	NOR F7435, T9-05 (ECP F012501, 80-03-20)	08-04-00	AKB
C	NOR F15001/840320 (ECP F012002/840321)	06-07-00	AKB
D	NOR M8J3005/880422	08-02-00	AKB



SOURCE USED ON:  
M64 SIGHTUNIT  
M64A1 SIGHTUNIT

**APPLICABLE DOCUMENTS**  
SOP. 1122222

SPECIFICATION CONTROL DRAWING  
PART No. 11733737

SUGGESTED SOURCE(S) OF SUPPLY	VENDOR	VENDOR PART NO.
SELF POWERED LIGHTING LTD CODE IDENT NO. 27216 8 WESTCHESTER PLAZA ELMSFORD, N.Y. 10523	NOT AVAILABLE	
SAUNDERS-ROE DEVELOPMENTS LTD. MILLINGTON ROAD HAYES MIDDLESEX UB9 4HD ENGLAND	NOT AVAILABLE	
BRANDHURST CO. LTD. P.O. BOX 70 HIGH WYCOMBE BUCKINGHAMSHIRE MK12-3PS ENGLAND	NOT AVAILABLE	
M.B. MICROTEC AG PFAUBURGSTRASSE 624 CH-3172-NIEDERWANGEN SWITZERLAND	NOT AVAILABLE	

REV	DESCRIPTION	DATE	BY
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**LAMP,  
RADIOLUMINOUS**

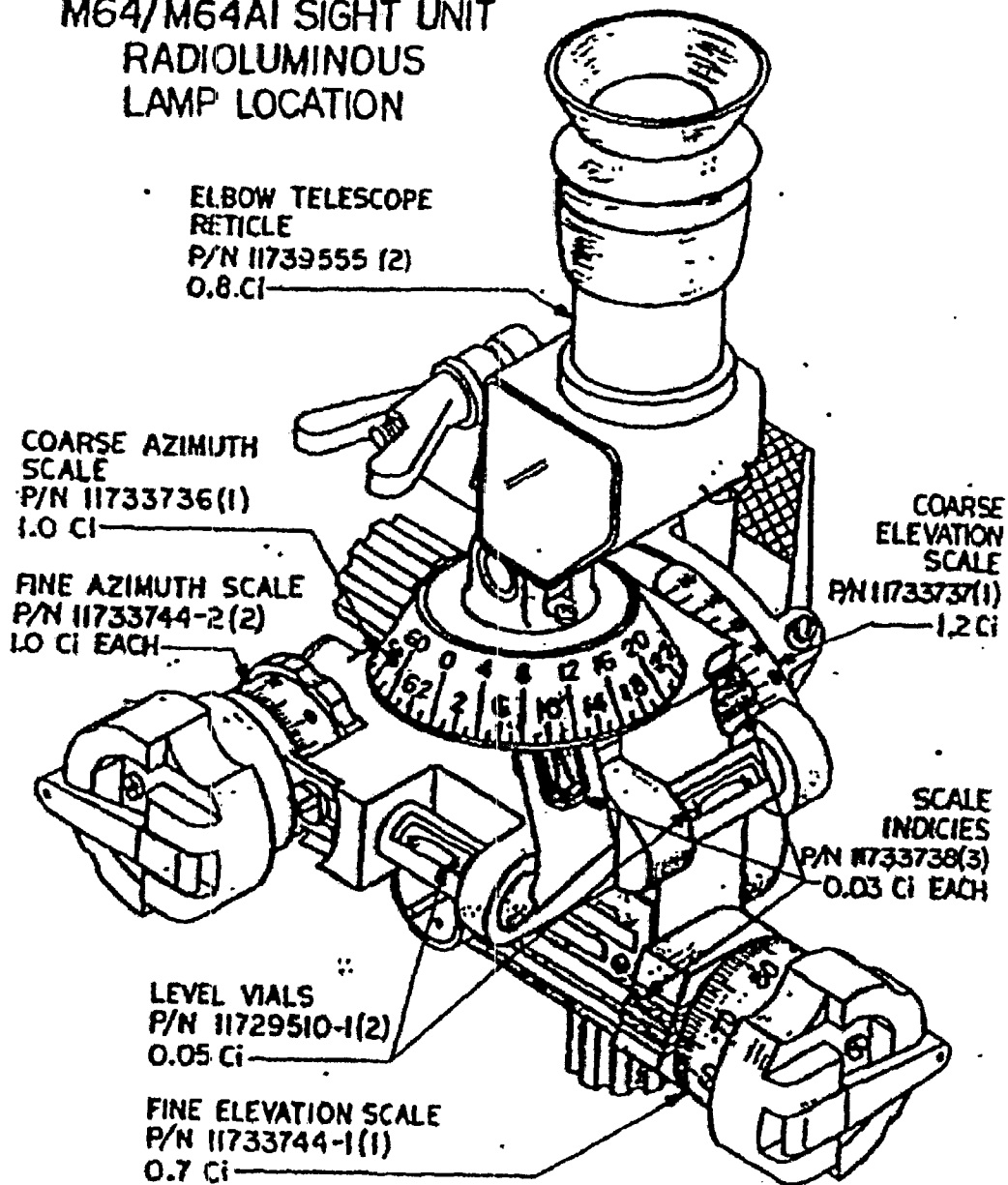
C 19200    11733737

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ATTACHMENT 2 OF 2

M64/M64AI SIGHT UNIT  
RADIOLUMINOUS  
LAMP LOCATION



TOTAL TRITIUM PER SIGHT UNIT 6.69 CURIES