

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

No.: NR-0155-S-113-S

DATE: March 7, 2006

PAGE 1 OF 2

SOURCE TYPE: Radioluminous Lamp

MODEL: 11733744-1 or 11733744-2

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

0.7 Curie (25.9 GBq) for 11733744-1
1.0 Curie (37 GBq) for 11733744-2

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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SOURCE TYPE: Radioluminous Lamp

DIAGRAM:

See Attachments 1 & 2.

REFERENCES:

The following supporting documents for the Model 11733744-1 and 11733744-2 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

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
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No.: NR-155-S-113-S DATE: March 7, 2006 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 +160°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.
- 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 A MINIMUM OF (SEE TABULATION).
- COLOR OF PHOSPHOR: GREEN SPECTRAL PEAK $5250\lambda \pm 50\lambda$, .16 DIA. 1/2 PEAK WIDTH $700\lambda \pm 50\lambda$.

X	CHANGE ERR PRAPX 6082	11/12/50
A	NOR 742001/840320	080711
B	NOR 742818/79408	080711
C	NOR 742001/840320	080711
D	NOR 66J3005/880422	080711
E	NOR 62J2007/926501	080711

SECTION A-A

GLASS VIAL
.0625 MAX PERMISSIBLE
TYPE E EPOXY, MIL-C-22760
TYPE I COLOR 17875 (180 DEGREE
ARC FOR FULL LENGTH OF VIAL
APPLY TWO COATS (MIN) OF FED-STD-598
ALTERNATIVE COATING DRAWING NO.
1785530.

SUGGESTED SOURCE(S) OF SUPPLY	VENDOR	VENDOR PART NO.	SOURCE USED ON:
SELF POWERED LIGHTING LTD. CODE IDENT NO 29218 8 WESTCHESTER PLAZA ELMSFORD, N.Y. 10523	NOT AVAILABLE		M64 SIGHTUNIT M64A1 SIGHTUNIT
SAUNDERS-ROE DEVELOPMENTS LTD. MILLINGTON ROAD HAYES MIDDLESEX UB5 4HS ENGLAND	NOT AVAILABLE		
BRANDHURST CO. LTD. P.O. BOX 70 HIGH WYCOMBE BUCKINGHAMSHIRE MK12 3PS ENGLAND	NOT AVAILABLE		
M.B. MEROTEC AG FREIBURGSTRASSE 624 CH-3171-NEIDERWANGEN SWITZERLAND	NOT AVAILABLE		

PART NO.	ACTIVITY CURIES MAX	BRIGHTNESS MICROLAMBERTS	INTERNAL PRESSURE AT +70°F	"A" ± 5°
11733744-1	0.7	400 MIN	2.50 ATM (NOM)	113°
11733744-2	1.0	500 MIN	2.50 ATM (NOM)	174°

APPLICABLE DOCUMENTS
SQAP 11733744

SPECIFICATION CONTROL DRAWING
PART NO. (SEE TABULATION)

74 MAR 11

LAMP, RADIOLUMINOUS

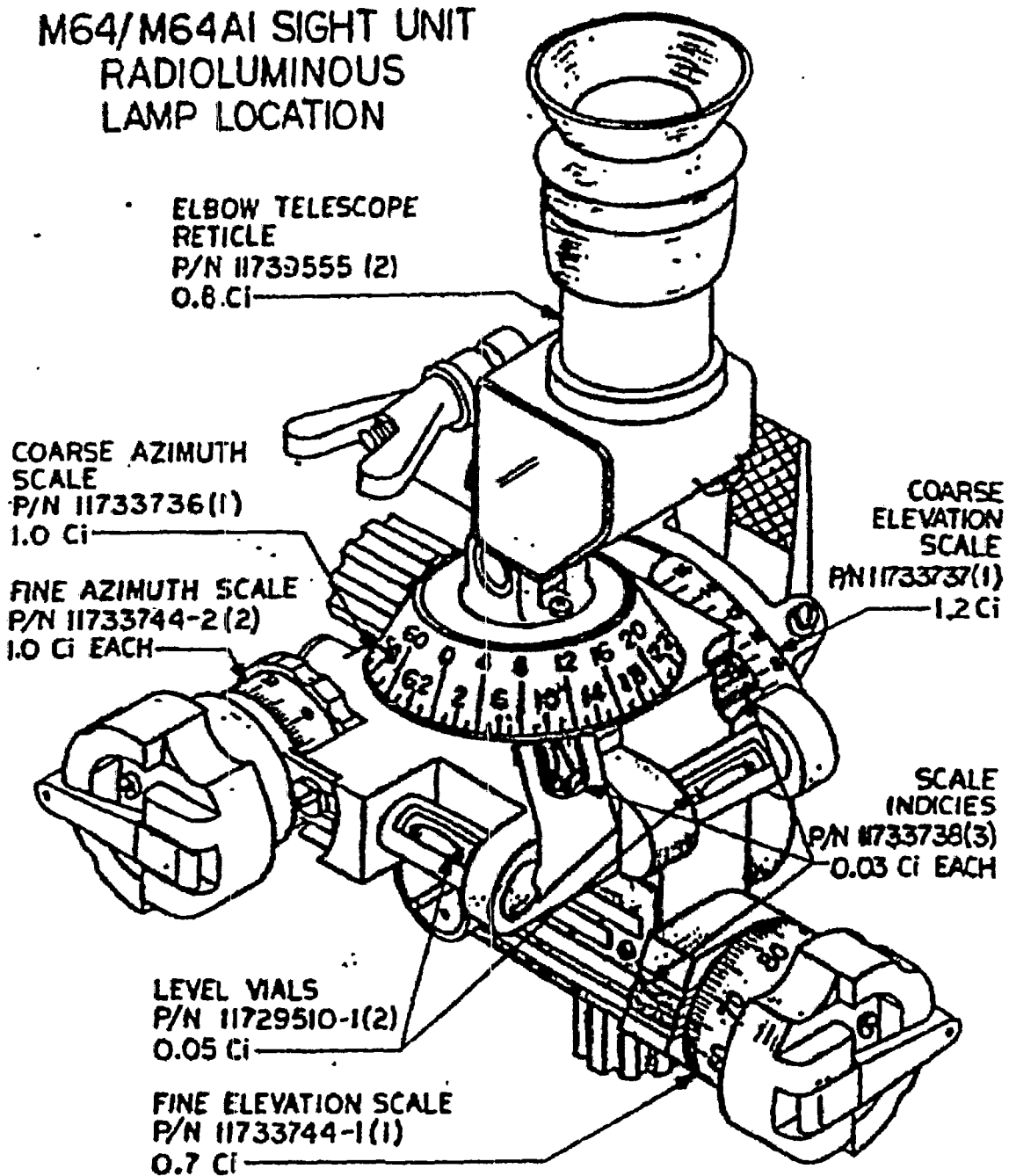
FIG. 19200 11733744

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ATTACHMENT 2 OF 2

M64/M64AI SIGHT UNIT
RADIOLUMINOUS
LAMP LOCATION



TOTAL TRITIUM PER SIGHT UNIT 6.69 CURIES