

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO: NR-155-S-114-S

DATE: MAR 8 1983

PAGE 1 OF 1

SOURCE TYPE: Radioluminous Lamp

MODEL: 11739179-1 or 11739179-2

MANUFACTURER/DISTRIBUTOR:

Department of the Army
U.S. Army Armament Material
Readiness Command (DRSAR-SF) --
Rock Island, IL 61299

MANUFACTURER/DISTRIBUTOR:

ISOTOPE: Hydrogen-3

MAXIMUM ACTIVITY: 9 curies (11739179-1)
5 curies (11739179-2)

LEAK TEST FREQUENCY: See License No. 12-00722-06

PRINCIPAL USE: (R) Gas Sources, for use in Models M58 (orange lamp-Model #11739179-1)
and M54 (green lamp-Model #11739179-2) aiming post lights.

DIAGRAM: See Attachments 1 and 2.

CUSTOM DEVICE: X YES NO

CUSTOM USER:

U.S. Department of Defense

REFERENCES: This registration document was formulated from information contained
within U.S. Dept. of Army License No. 12-00722-06.

8403020119 840209
PDR FOIA
HAMMITT84-74 PDR

ISSUING AGENCY: U.S. Nuclear Regulatory Commission

NOTES

1. EMPLOYED IN ACCORDANCE WITH MIL-STD-100

2. REQUIREMENTS

- MARKING, LABELING AND SHIPPING OF PACKAGES AND CONTAINERS SHALL BE IN ACCORDANCE WITH DPM 4145.8 "RADIOACTIVE COMMODITIES IN THE DOD SUPPLY SYSTEM."
- THERE SHALL BE NO EVIDENCE OF PHYSICAL FAILURE SUCH AS FRACTURE OR LIGHT LOSS AFTER EXPOSING THE LIGHT SOURCE TO 80°F AND -160°F FOR A PERIOD OF EIGHT HOURS AT EACH TEMPERATURE.
- SUBSEQUENT TO SUBMERGING THE LIGHT SOURCE IN WATER FOR FOUR HOURS AT ROOM TEMPERATURE, RADIOACTIVE CONTENT OF THE WATER SHALL NOT EXCEED .005 MICROCURIE.
- VIAL TO BE FILLED WITH PRODUCTION GRADE TRITIUM H₂ MINIMUM 94% PURE, LESS THAN 1% TRITIUM OXIDE, BALANCE OF CONSTITUENTS TO BE CHEMICALLY INERT. 9.0 CURIE MAXIMUM PER ORANGE LAMP, 5.0 CURIE MAXIMUM PER GREEN LAMP.
- VIAL MATERIAL: GLASS, TYPE I, CLASS A, SPEC DO-G-541.
- ADVISORY: INTERNAL PRESSURE AT 70°F SHOULD NOT EXCEED 2.5 ATM.
- FOR COLOR OF PHOSPHOR AND MINIMUM ACCEPTABLE BRIGHTNESS IN MICROLAMBERTS, SEE TABULATION.
- 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 THE DATE OF MANUFACTURE BRIGHTNESS MEASUREMENTS SHALL NOT SHOW A DECAY IN EXCESS OF 6.0% WHEN MEASURED OVER ANY CONSECUTIVE 30 DAY PERIOD. FURTHER THE FINAL BRIGHTNESS MEASUREMENT AT TIME OF ACCEPTANCE SHALL MEET THE MINIMUM ACCEPTABLE BRIGHTNESS LEVEL SHOWN IN TABULATION.

3. SQAP-11739179 APPLIES.

4. IDENTIFICATION OF THE "SUGGESTED SOURCE(S) OF SUPPLY" HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM(S).

5. SUGGESTED SOURCES OF SUPPLY:

VENDOR	VENDOR PART NO.
SELF-POWERED LIGHTING LTD 8 WEST CHESTER PLAZA ELMSFORD, NY 10523	NOT AVAILABLE
BRANDHURST CO. LTD. P.O. BOX 70 HIGH WYCOMBE BUCKINGHAMSHIRE, ENGLAND HP12-3PS	NOT AVAILABLE
SAUNDERS-ROE DEVELOPMENT LTD. MILLINGTON ROAD HAYES MIDDLESEX ENGLAND UB3 4NB	NOT AVAILABLE
MERC & BENTELI NUCLEAR, AG. FREIBURGERSTRASSE 624 CH-3172-NIEDERWANGEN SWITZERLAND	NOT AVAILABLE

SYM	REVISION	DATE	REVISION
E	REPLACES REV D WORKING NOR F9A203B 20-01-18	20-01-18	1

PHOSPHOR (SEE TABLE FOR COLOR)

GLASS VIAL THICKNESS
.04 ± .02

BLEND R
LACQUER, ACRYLIC, COLOR WHITE
NO. 17875, SPEC MIL-L-81352

SECTION A-A

SOURCE USED ON:
M58 Aim Post Light
M59 Aim Post Light

MECHANICAL PROPERTIES	
TEMP	
TENS	
ELONG	
HARD	
BRIN	
IMP	
APPLICATION	

$\frac{1}{4} \pm \frac{1}{32} \phi$
CLEAR APERTURE WINDOW TO BE FREE OF PHOSPHOR AND PAINT

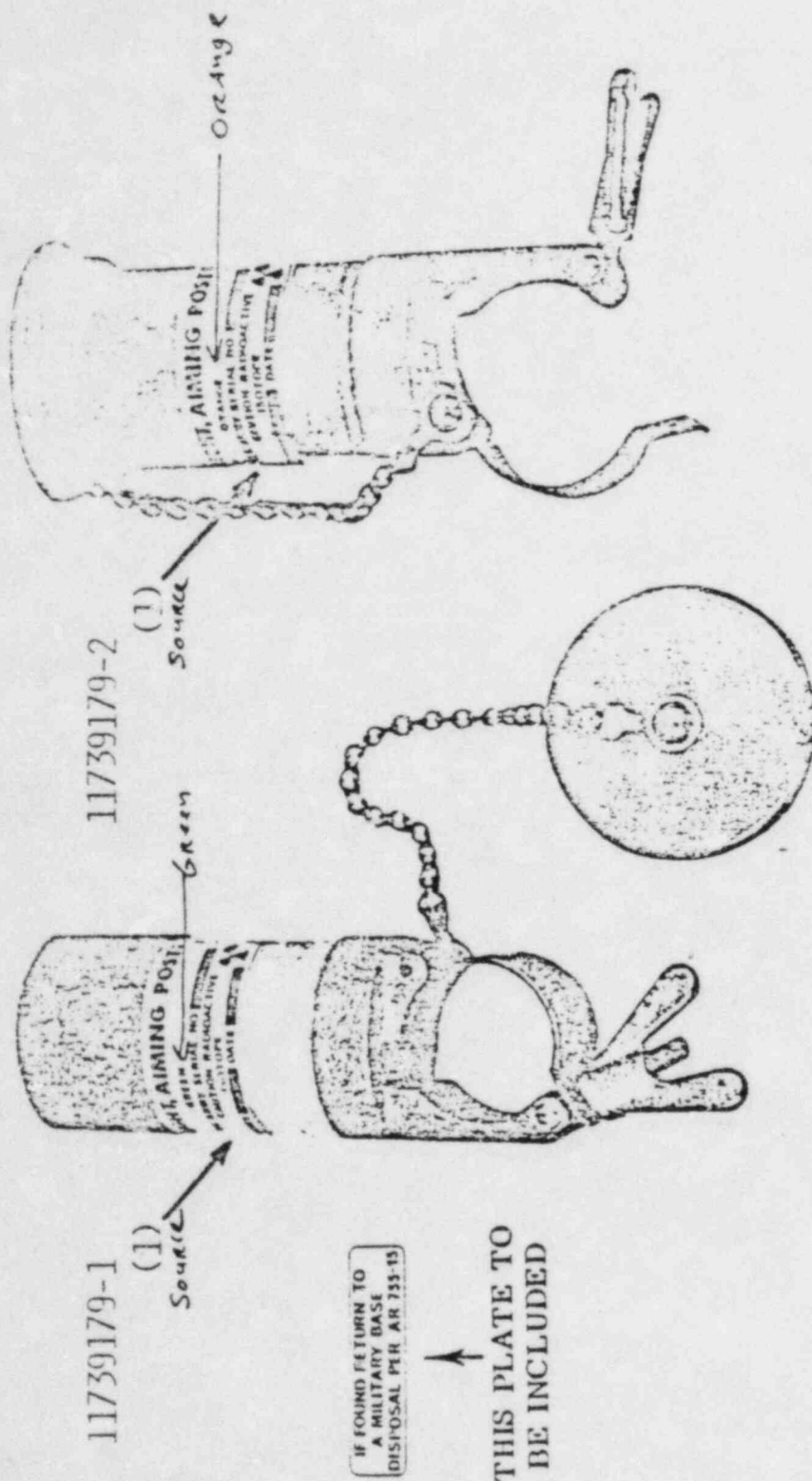
PART NUMBER	PHOSPHOR COLOR	SPECTRAL PEAK	$\frac{1}{2}$ PEAK WIDTH	MINIMUM ACCEPTABLE BRIGHTNESS
11739179-1	GREEN	5250 Å ± 50 Å	700 Å ± 50 Å	2500 μL
11739179-2	ORANGE	5950 Å ± 100 Å	900 Å ± 100 Å	2100 μL

SPECIFICATION CONTROL DRAWING
 PART NO. SEE TABLE

ORIGINAL DATE OF DRAWING 75-02-03		U.S. ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND FOVER, NEW JERSEY 07701	
DRAWN BY ACS	CHECKED BY JST	LAMP, RADIOLUMINOUS	
ENG'D BY DNY	ENG'D BY DA		
J. B. Wiland		SCALE C	CODE IDENT NO 19200
J. B. Wiland		11739179	
SCALE 2/1		UNIT WT.	SHEET

DATE: 8-MAR 8 1983

NO: NP-155-S-114-S



TRITIUM-SEALED IN GLASS SPHERE

LIGHT, AIMING POST: GREEN M58
 LIGHT, AIMING POST: ORANGE M59