MS14-001-16/25
Nov.15,2002

DESCRIPTION OF RADIOACTIVE SOURCE

1. Application:	Ionization Smoke Detector
2. Smoke Detector Manufacturer and Model Number:	NOHMI BOSAI LTD. 7-3, Kudan Minami 4-chome Chiyoda-ku Tokyo 102-8277, Japan Model : 7051
3. Radioactive Source	
Manufacturer	AEA Technology plc Harwell,Oxfordshire,England
Model Number	AMM.1001H
Product Code	AMMK7544
4. Characteristics of Radioactive Source:	Material : Americium 241 (Hermetically sealed) Activity : 0.8 microcurie (29.6kBq) Chemical form : Americium oxid (AmO_2) Physical form : Refer to "Certificate of Approval of Design for Special Form Radioactive Material"
5. Number of source per Detector :	1 Piece
6. Mounting :	Radioactive Source is loaded into a holder. Refer to "Certificate of Approval of Design for Special Form Radiozctive Material"

B27

7. Details of securement of Radioactive Source.
(Shielding, Containment and protection against removal.)

As refer to Certificate of Approval of Design for Special Form Radioactive Material, the source is loaded into a holder, fixed to the printed wiring board together with the support plate, and housed in the outer chamber.
As can be seen from DETECTOR ASSEMBLY DWG. NO. AF30403200 / CHAMBER ASSEMBLY DWG. NO. AF30404098, the whole source is completely shielded with the metallic outer chamber and shield case so that the source can not be readily disassembled nor touched with finger.

Maximum external radiation levels measured at distances of 5 and 25cm away from any external surface of the detector are 0.025 μ Sv/h(0.0025 mrem/h) and 0.0019 μ Sv/h(0.00019 mrem/h) respectively.
For more detailed test data on the detector, please refer to the TEST REPORT.

The detector cannot be removed from the base without using the special tool, and an alarm is indicated on the control panel when the detector is removed from the base.

Reference GB/323/S-85
Certificate Issue 2

Certificate of Approval of Design for Special Form Radioactive Material

Title
Alpha Foil Disc in ICSD Holder
Drawing Nos and Specification References
Assembly: P196361 Rev. E Details: P288210 Rev. E 3A 61472 Issue D MPW/GB323/196361 Dated 7 November 1988; QARS/DD/323/1294 Dated 12 December 1994
Q.A. Programme Ref: "Amersham International's Transport Safety Arrangements"

Radioactive Material	Maximum Activity
Americium 241	37 KBq

THIS IS TO CERTIFY that the Secretary of State for Transport being, for the purposes of the Regulations of the International Atomic Energy Agency, the Competent Authority of Great Britain in respect of inland surface transport and of the United Kingdom of Great Britain and Northern Ireland in respect of sea and air transport and the Department of the Environment for Northern Ireland being the Competent Authority of Northern Ireland in respect of inland surface transport, have approved the above mentioned Special Form Design. Radioactive material manufactured to the above-mentioned design qualifies as special form radioactive material and as such will meet the requirements of the regulations overleaf.

This Certificate of Approval applies only to the design as set out in the above named drawings and specifications submitted by Amersham International plc

In the event of any alteration in the composition of the package, the package design or in any of the facts stated in the application for approval, this certificate will cease to have effect unless the Competent Authority is notified of the alteration and the Competent Authority confirms the certificate notwithstanding the alteration.

This Certificate Cancels all Previous Issues and is valid until 28 February 1998

COMPETENT AUTHORITY
IDENTIFICATION MARK:

GB/323/S-85

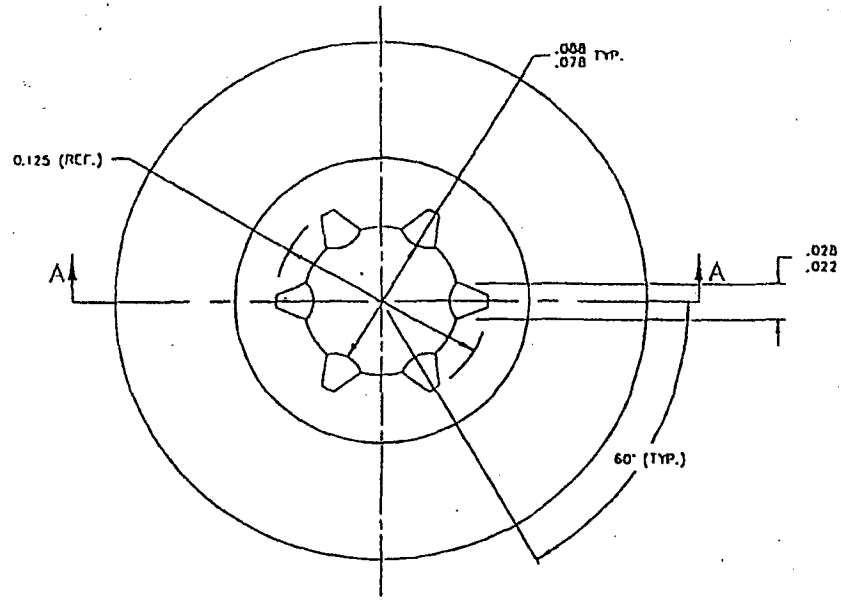
UNITED KINGDOM COMPETENT AUTHORITY FOR THE TRANSPORT
- 3 MAR 1995
OF RADIOACTIVE MATERIALS

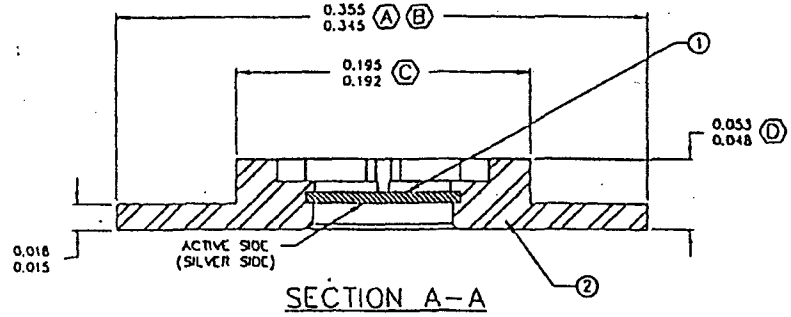
Transport Radiological Adviser
Department of Transport
2 Marsham Street
London SW1P 3EB

On behalf of the Secretary of State for Transport and the Department of the Environment for Northern Ireland

DWG NO. P196361

LTR	REVISION DESCRIPTION	DATE	ECN	APPVD
A	DIMENSION ERROR CORRECTED.	26MAY87	0660	
	0.353/0.347 WAS 0.253/0.247			
B	0.355/0.345 WAS 0.353/0.347	10JUN87	0672	
C	0.195/0.192 WAS 0.193/0.190	10JUN87	0672	
	"ACTIVE SIDE" NOTE ADDED.	10JUN87		
D	0.053 WAS 0.052	15JUN87	0672	
E	ITEM NO., DESCRIPTION, ETC. ADDED.	24DEC88	0767	





SECTION A-A

COPY

ITEM	DESCRIPTION	DWG. NO.	MATERIAL	ACCD.
2	Holder, Part Number 268210	P268210	stainless steel	1
1	Americium - 241 Source Kit, AMMOC537	SA61472	composite	1

		BY	DATE
DESIGN		MJG	25Sep86
DRAWN		CWS	140ct86
DRFT. CHECK		DLE	170ct86
RE. APPVD		NA	NA
MFG. APPVD		MJG	170ct86
QAC APPVD		KEP	170ct86

USED WITH: N/A

MATERIAL: STAINLESS STEEL

FINISH: N/A

SUR. ROU.

UNLESS NOTED OTHERWISE: REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE.

ALL DIMENSIONS IN INCHES

TOLERANCES: FRAC. ± 1/32; .X ± 0.030; .XX ± 0.010; .XXX ± 0.005; ANG. ± 1/2°

SCALE NONE

PART NO. 196361

PROJ. NO. N/A

AMERSHAM CORPORATION
2636 S. Clearbrook Dr.
Arlington Heights, IL 60005
(312) 593-6300

Amersham

TITLE: C.A. of Source Assembly 196361

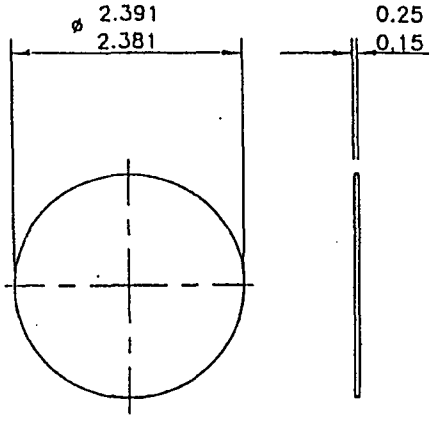
DWG SIZE C | SHEET 1 OF 1

DWG NO. P196361 | REV. E

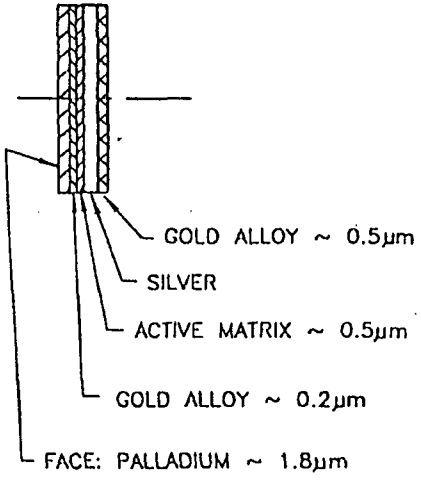
DRG NO. 3A61472

NOTES:

1. ACTIVE MATERIAL: AMERICIUM 241
2. ACTIVITY: 29.6 kBq (0.8μCi) ± 20%
3. PEAK ENERGY LEVEL: 4.5 MeV ± 10%



FOIL DISC BLANKED FROM ROLLED SHEET



ENLARGED SECTION THR'O FOIL

FOR REFERENCE ONLY 15. JAN 1996

SCALE 5:1	E	DCR3794	2.1.96	C.D.W.					
	ISSUE	MOD No.	DATE	DRAWN	CHECKED	APPROVED	QA APPROVED		

TOLERANCES — UNLESS OTHERWISE STATED

MATERIAL —

GENERAL NOTES
THIRD ANGLE PROJECTION
MODIFICATIONS INDICATED BY ISSUE IN ◇
THIS DRAWING CONFORMS TO BS308.
ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
DO NOT SCALE

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TITLE ALPHA FOIL DISC AMMK6045, AMMK4021 & AMMQ6527 Ⓔ

SURFACE TEXTURE — UNLESS OTHERWISE STATED

FINISH — REMOVE ALL BURRS

APPROVAL
THIS DRAWING IS NOT TO BE USED FOR ANY PURPOSE UNLESS SIGNED AS APPROVED

USED ON —

SHT. SIZE A3

DRG NO. 3A61472

SHT 1 OF SHTS 1

MS14-001 APP.B-3/5

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CERTIFICATE OF RADIOACTIVE SOURCE INTEGRITY

Title : Alpha Foil Disc in I.C.S.D. Holder

Assembly code : P288210 (Amersham Corporation)

Assembly drawing : P196361 (Amersham Corporation)

Nuclide : Americium-241 (Am-241)

Radiotoxicity group : A

Maximum activity : 37 kBq (1 uCi)

CLASSIFICATION : BS/ISO/ANSI 77 C64444 (Assessed)

RECOMMENDED WORKING LIFE : 10 Years

Test sources : No tests were performed. This assessed classification is based on experimental data obtained for foils of similar construction to that used in this design, see QCS 600.

Tests carried out in accordance with:

Leak test method	Temperature	Pressure	Impact	Vibration	Puncture	Units

Production Manager

Date 27 April 1992

QA Manager

Date 27/4/92

Q.C.
AUTHENTICATED

Amersham

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Buckinghamshire England HP7 9LL

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CERTIFICATE OF RADIOACTIVE SOURCE INTEGRITY

Title : Alpha Foil Disc in I.C.S.D. Holder

Assembly code : 196361 (Amersham Corporation)

Assembly drawing : P196361 (Amersham Corporation)

Nuclide : Americium-241 (Am-241)

Radiotoxicity group : A

Maximum activity : 37 kBq (1.0 uCi)

CLASSIFICATION : SPECIAL FORM TEST DATA

RECOMMENDED WORKING LIFE : 10 Years

Test sources : 30 off active sources, serial numbered B1 to B30 inclusive, each containing 0.9 microcuries of Americium-241 in a metal foil disc. Assembled as in drawing number P196361 revision E.

Tests carried out in accordance with : IAEA SAFETY SERIES No.6 1985

Leak test method	Impact	Percussion		Temperature		Units
S.S. No 6 Para 612.(c)	PASS 0.13	PASS 0.18		PASS 0.32		nanocuries
S.S. No 6 P 612.(f)	PASS 0.14	PASS 0.13		PASS 0.15		nanocuries

NOTE: 10 sources were subjected to each test, the leak test results quoted are the sum of all 10 leak test results.

.....
Production Manager

Date 12/2/92

.....
QA Manager

Date 14/2/92

Amersham