



U.S. Department
of Transportation

Pipeline and
Hazardous Materials
Safety Administration

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS

CERTIFICATE USA/0356/S-96, REVISION 15

East Building, PHH-23
1200 New Jersey Ave, SE
Washington, D.C. 20590

This certifies that the source described has been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency¹ and the United States of America² for the transport of radioactive material.

1. Source Identification - Eckert & Ziegler Isotope Products Model HEG-XXX Series (A3000, A3000-1, A3015, A3015-1, A3023, A3024-1, A3024-2, A3024-3, and A3024-4), where XXX represents the radionuclide mass number.
2. Source Description - Cylindrical double encapsulations made of Type 304 or 304L stainless steel and fusion welded. Approximate external dimensions are 6.4 mm (0.25 in.) in diameter and 15.9 mm (0.625 in.) in length (Models A3000 and A3000-1); 6.0 mm (0.236 in.) in diameter and 8.0 mm (0.315 in.) in length (Models A3015 and A3015-1); 6.0 mm (0.236 in.) in diameter and 12.0 mm (0.473 in.) in length with one end having an internal 3-48 thread (Model A3023); and 6.0 mm (0.236 in.) in diameter and 10.0 mm (0.394 in.) in length (Models A3024-1, A3024-2, A3024-3, and A3024-4). Construction shall be in accordance with attached Isotope Products Laboratories Drawing Nos. 3000 (Sheet 3 or 4 of 10), 3015 (Sheet 3 or 4 of 8), 3023 (Sheet 3 of 7), or 3024 (Sheet 4 or 5 of 8).

¹ "Regulations for the Safe Transport of Radioactive Material, 2012 Edition, No. SSR-6" published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

² Title 49, Code of Federal Regulations, Parts 100-199, United States of America.

CERTIFICATE USA/0356/S-96, REVISION 15

3. Radioactive Contents - The sources described by this certificate are authorized to contain any one of the following radionuclides in the chemical form identified and limited to the activity shown:

<u>Radionuclide</u>	<u>Form</u>	<u>Activity GBq (Ci)</u>	
Na-22	NaCl in gold or ceramic	3.7	(0.10)
Co-57	CoCl ₂ or CoO in ceramic or Co metal plated on Ni foil	11.1	(0.30)
Co-58	CoCl ₂ or CoO in ceramic	11.1	(0.30)
Co-60	CoCl ₂ or CoO in ceramic or 1 mm x 1mm Ni clad Co	22.2	(0.60)
Ge-68	GeO ₂ in silver	1.9	(0.05)
Ba-133	BaSO ₄ in ceramic	3.7	(0.10)
Cs-137	CsCl in gold or Cs in ceramic	22.2	(0.60)
Eu-152	Oxide in gold or ceramic	0.74	(0.020)
Ra-226	RaSO ₄ in gold or ceramic	1.9	(0.05)
Cf-252	Oxide in metal or ceramic	0.037	(0.001)
Actinides*	Oxides in gold or ceramic	1.9	(0.05)

*(Isotopes of Ac, Th, Pa, Np, U, Pu, Am, and Cm only)

4. Management System Activities - Records of Management System activities required by Paragraph 306 of the IAEA regulations shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.
5. Expiration Date - This certificate expires on May 31, 2029. Previous editions which have not reached their expiration date may continue to be used.

CERTIFICATE USA/0356/S-96, REVISION 15

This certificate is issued in accordance with paragraph(s) 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the March 29, 2024 petition by Eckert & Ziegler Isotope Products, Valencia, CA, and in consideration of other information on file in this Office.

Certified By:

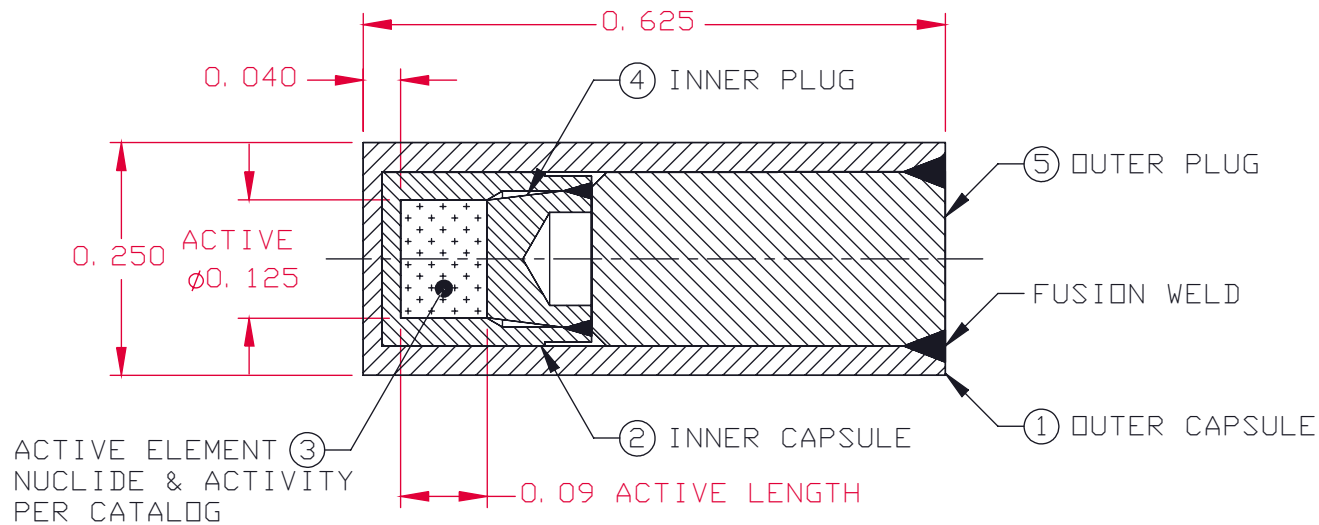


 William Schoonover
Associate Administrator for Hazardous
Materials Safety

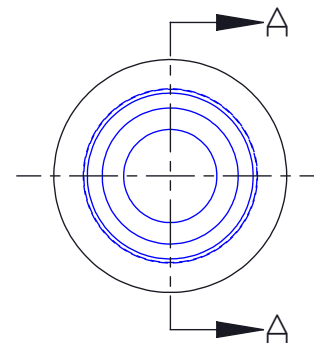
May 16, 2024

(DATE)

Revision 15 - Issued to extend the expiration date.



SECTION A-A



SECTION A-A

3. IDENTIFY PART NUMBER
2. ALL CAPSULES AND PLUGS ARE MADE FROM 304 OR 304L STAINLESS STEEL AND THE ACTIVE ELEMENT IS CERAMIC
1. ASSEMBLE COMPLETE PER ENGINEERING DRAWING AND FUSION WELD AS REQUIRED

NOTES: UNLESS OTHERWISE SPECIFIED

P/N A3000 ASSEMBLY, MODEL 225 POINT SOURCE

Eckert & Ziegler

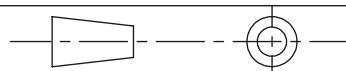
Isotope Products

Valencia, California 91355

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

FRACTION	TOLERANCES ON			ANGLE
	DECIMAL	XX	XXX	
±1/64	±.1	.01	.002	±.5°

THIRD ANGLE PROJECTION



DESIGN
EZ/DI

SCALE
NONE

SIZE
A

DRAWING TITLE
MODEL 225 POINT SOURCE

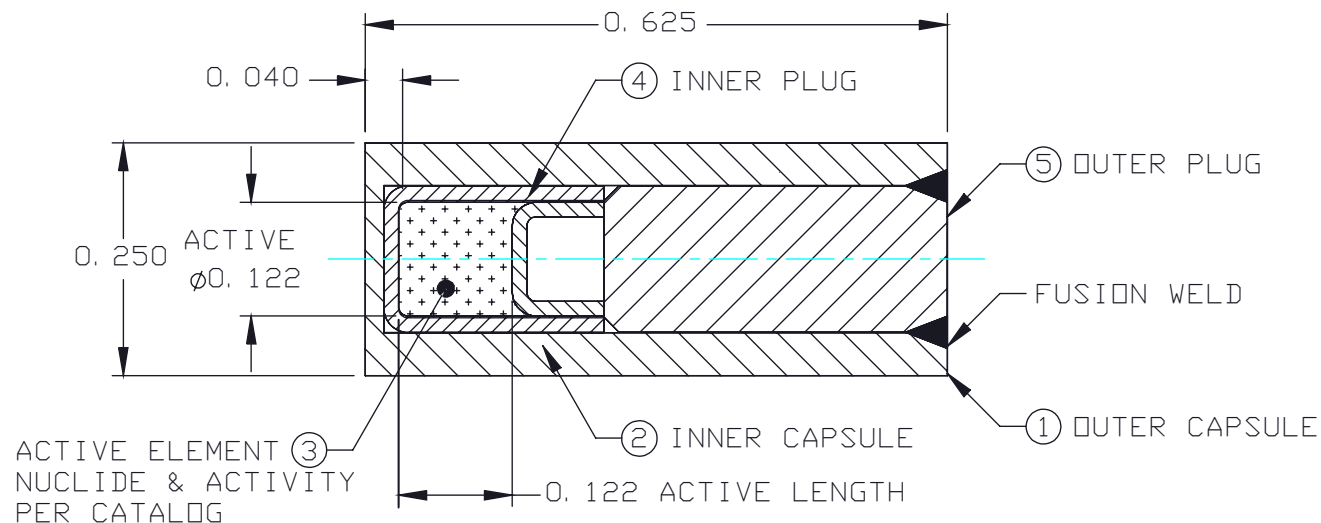
SERIES TITLE
INDUSTRIAL SOURCES, HIGH INTENSITY
GAMMA AND NEUTRON

CAGE CODE
32993

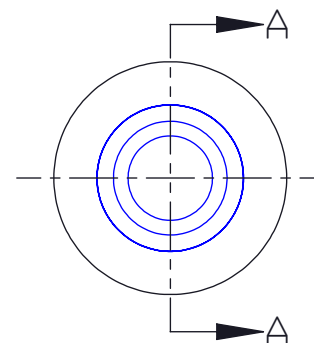
REVISION
L

DRAWING NUMBER
3000

SHEET
3 OF 10



SECTION A-A



3. IDENTIFY PART NUMBER
2. ALL CAPSULES AND PLUGS ARE MADE FROM 304 OR 304L STAINLESS STEEL AND THE ACTIVE ELEMENT IS CERAMIC
1. ASSEMBLE COMPLETE PER ENGINEERING DRAWING AND FUSION WELD AS REQUIRED

SECTION A-A

NOTES: UNLESS OTHERWISE SPECIFIED

P/N A3000-1 ASSEMBLY, MODEL 225 POINT SOURCE

Eckert & Ziegler

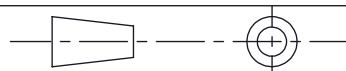
Isotope Products

Valencia, California 91355

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

FRAC- TION	TOLERANCES ON			ANGLE
	DECIMAL	XX	XXX	
±1/64	±.1	.01	.002	±.5°

THIRD ANGLE PROJECTION



DESIGN
EZ/DI

SCALE
NONE

SIZE
A

DRAWING TITLE
MODEL 225 POINT SOURCE

SERIES TITLE
INDUSTRIAL SOURCES, HIGH INTENSITY
GAMMA AND NEUTRON

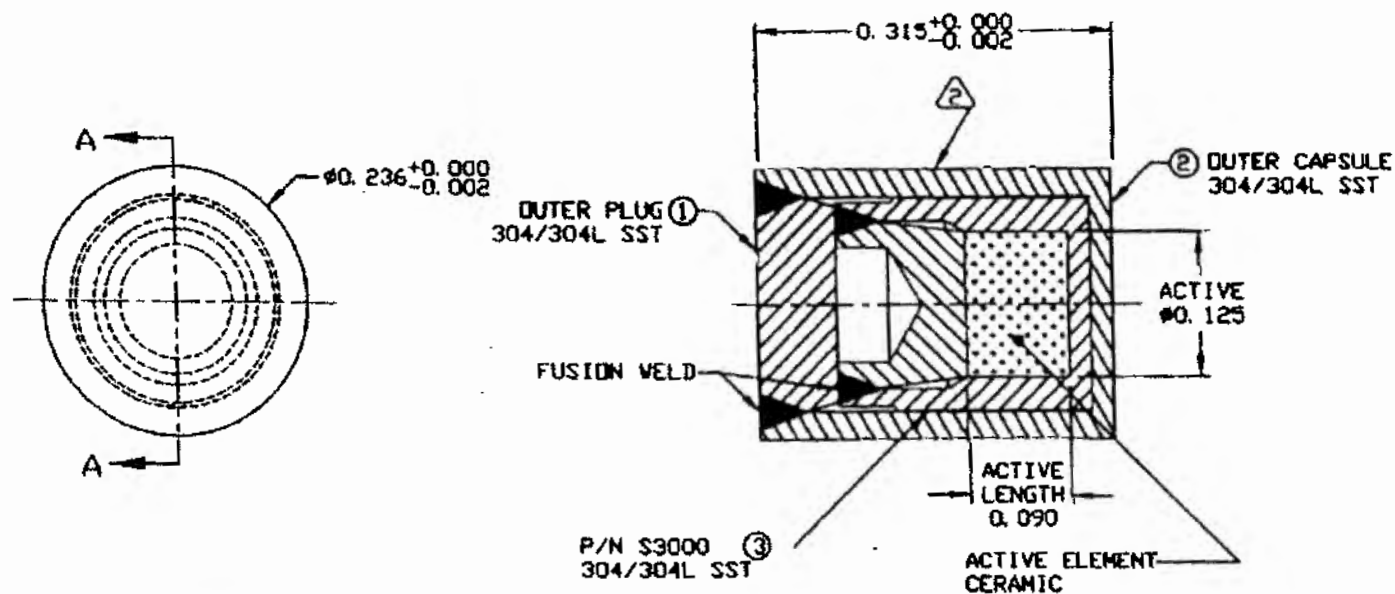
CAGE CODE
32993

REVISION
L

DRAWING NUMBER
3000

SHEET
4 OF 10

THIS DRAWING IS THE PROPERTY OF ECKERT&ZIEGLER ISOTOPE PRODUCTS AND MAY NOT BE USED, REPRODUCED, PUBLISHED OR DISCLOSED TO OTHERS WITHOUT EXPRESS AUTHORIZATION BY ECKERT&ZIEGLER ISOTOPE PRODUCTS.



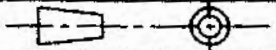
3. IDENTIFY PART NUMBER

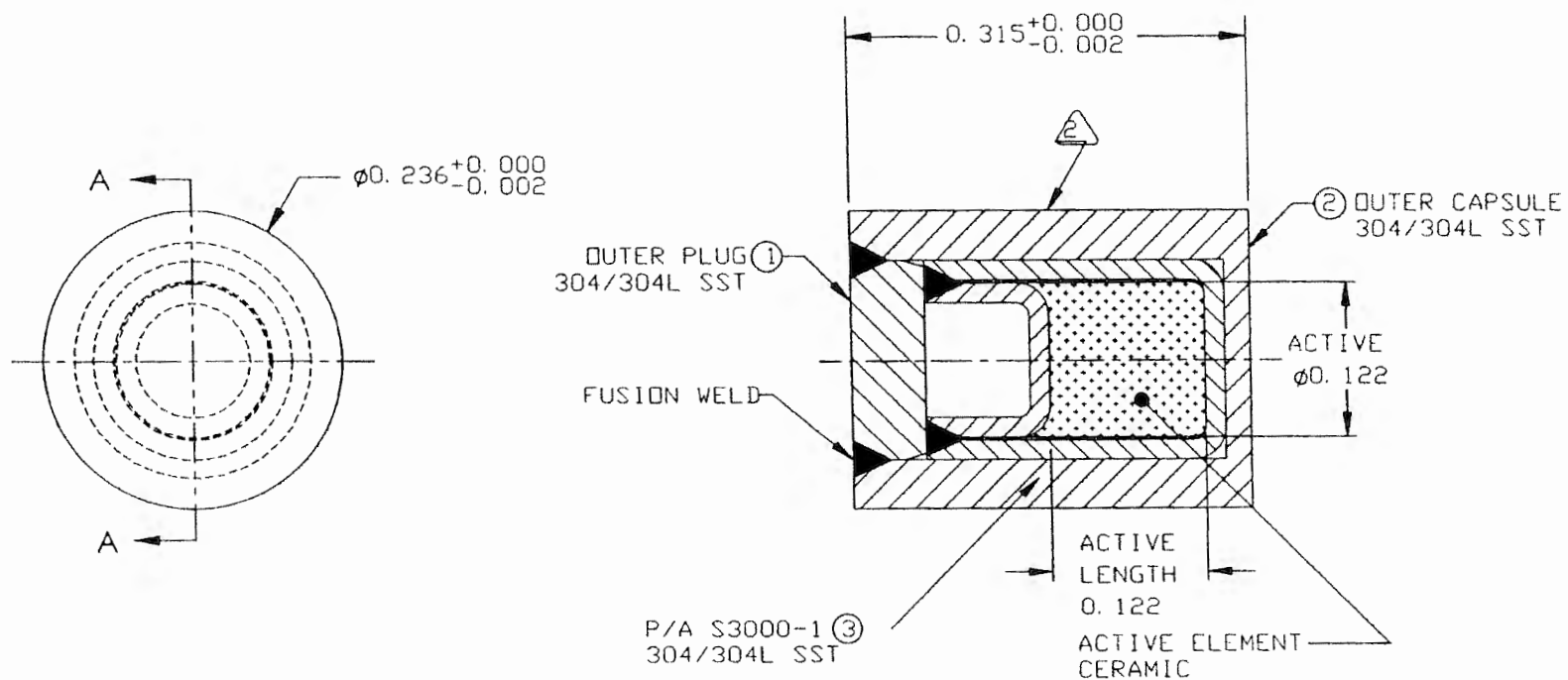
② ENGRAVE CHARACTERS 0.060 HIGH x 0.003 DEEP MAXIMUM
AS SHOWN
IPL NUCLIDE ACTIVITY SERIAL NUMBER

1. ASSEMBLE COMPLETE PER ENGINEERING DRAWING
AND PER PROCEDURE

NOTES: UNLESS OTHERWISE SPECIFIED

P/N A3015 ASSEMBLY

 Isotope Products Laboratories An Eckert & Ziegler Company VALENCIA, CALIFORNIA 91355	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			DESIGN EZ/DI	DRAWING TITLE SPECIAL 225 CAPSULE, GAMMA POINT SOURCE			
	TOLERANCES ON			SCALE NONE	SERIES TITLE INDUSTRIAL SOURCES, HIGH INTENSITY GAMMA AND NEUTRON			
	FRAC- TION ±1/64	DECIMAL X XX XXX ±.1 .01 .002	ANGLE ±.5°	SIZE A	CAGE CODE 32993	REVISION G	DRAWING NUMBER 3015	SHEET 3 OF 8
THIRD ANGLE PROJECTION								
								



3. IDENTIFY PART NUMBER

2 ENGRAVE CHARACTERS 0.060 HIGH x 0.003 DEEP MAXIMUM
AS SHOWN:
IPL NUCLIDE ACTIVITY SERIAL NUMBER

1. ASSEMBLE COMPLETE PER ENGINEERING DRAWING
AND PER PROCEDURE

NOTES: UNLESS OTHERWISE SPECIFIED

A3015-1 ASSEMBLY



Isotope Products
Laboratories

An Eckert & Ziegler Company
VALENCIA, CALIFORNIA 91355

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOLERANCES ON				
FRACTION	DECIMAL	XX	XXX	ANGLE
$\pm 1/64$	$\pm .1$	$.01$	$.002$	$\pm .5^\circ$

THIRD ANGLE PROJECTION



DESIGN
EZ/DI

DRAWING TITLE
SPECIAL 225 CAPSULE,
GAMMA POINT SOURCE

SCALE
NONE

SERIES TITLE
INDUSTRIAL SOURCES, HIGH INTENSITY
GAMMA AND NEUTRON

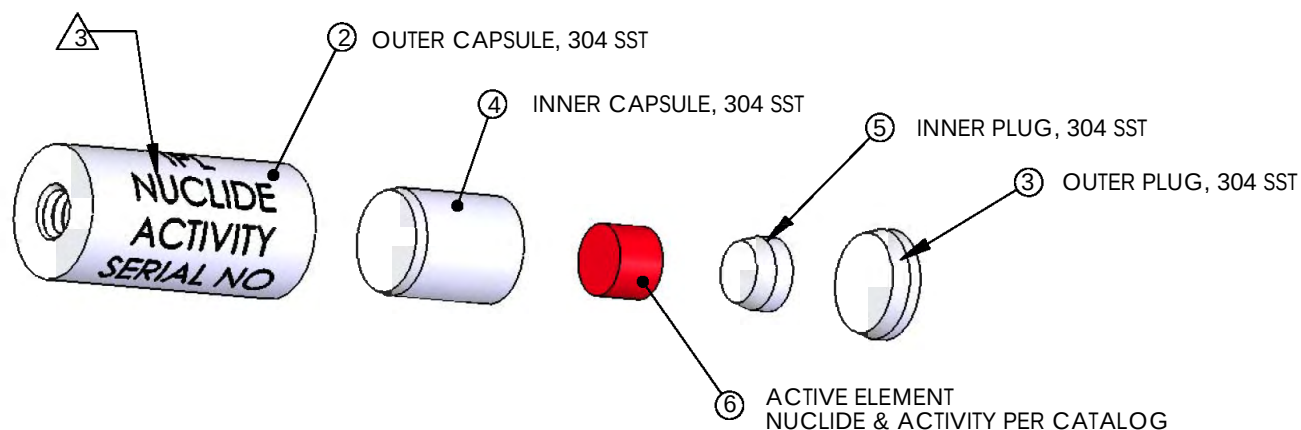
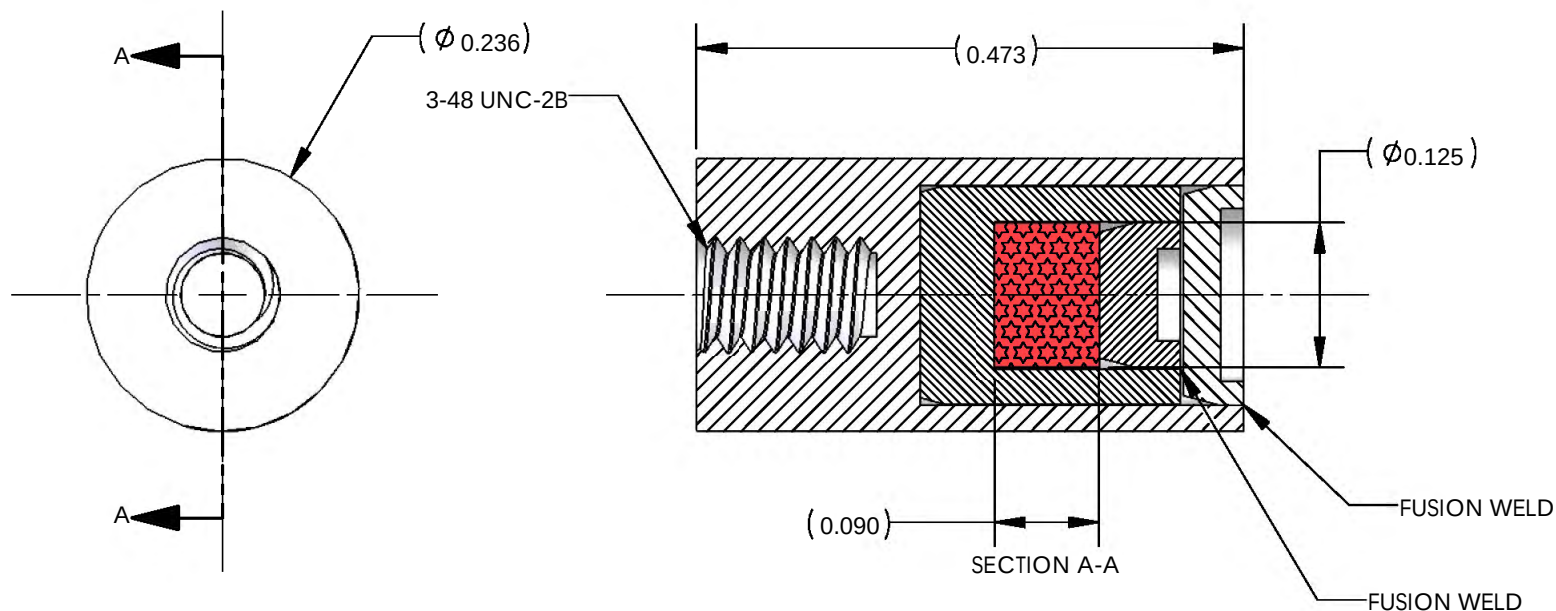
SIZE
A

CAGE CODE
32993

REVISION
G

DRAWING NUMBER
3015

SHEET
4 OF 8



- 3 ENGRAVE CHARACTERS 0.060 HIGH X 0.003 DEEP MAX AS SHOWN (BLACK FILL)
 1. ASSEMBLE PER ENGINEERING DRAWING
 2. PACKAGE AND IDENTIFY PART NUMBER THEREON
 3. ENGRAVE CHARACTERS 0.060 HIGH X 0.003 DEEP MAX AS SHOWN (BLACK FILL)
 4. IPL, NUCLIDE, ACTIVITY, SERIAL NO.

P/N A3023 GAMMA METRICS ASSEMBLY



Eckert & Ziegler
Isotope Products

VALENCIA, CALIFORNIA 91355

CAGE CODE 32993

DRAWING SIZE LETTER

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH SIZES.
METRIC UNITS [mm] ARE IN MILLIMETERS.

TOLERANCES (UNLESS OTHERWISE SPECIFIED)
 X.XXX ± .002 INCH ANGULAR TOLERANCE OF 0°±30°
 X.XX ± .005 INCH FRACTIONAL DIMENSIONS ± 1/32"
 X.X ± .03 INCH REFERENCE DIMENSIONS () N/A
 X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX

DRAWN JMD/RLT

ME/CHECKER

SC

ENGINEER

EZ

SCALE

6:1

TITLE
GAMMA METRICS

SERIES TITLE
HIGH INTENSITY GAMMA AND NEUTRON SOURCES

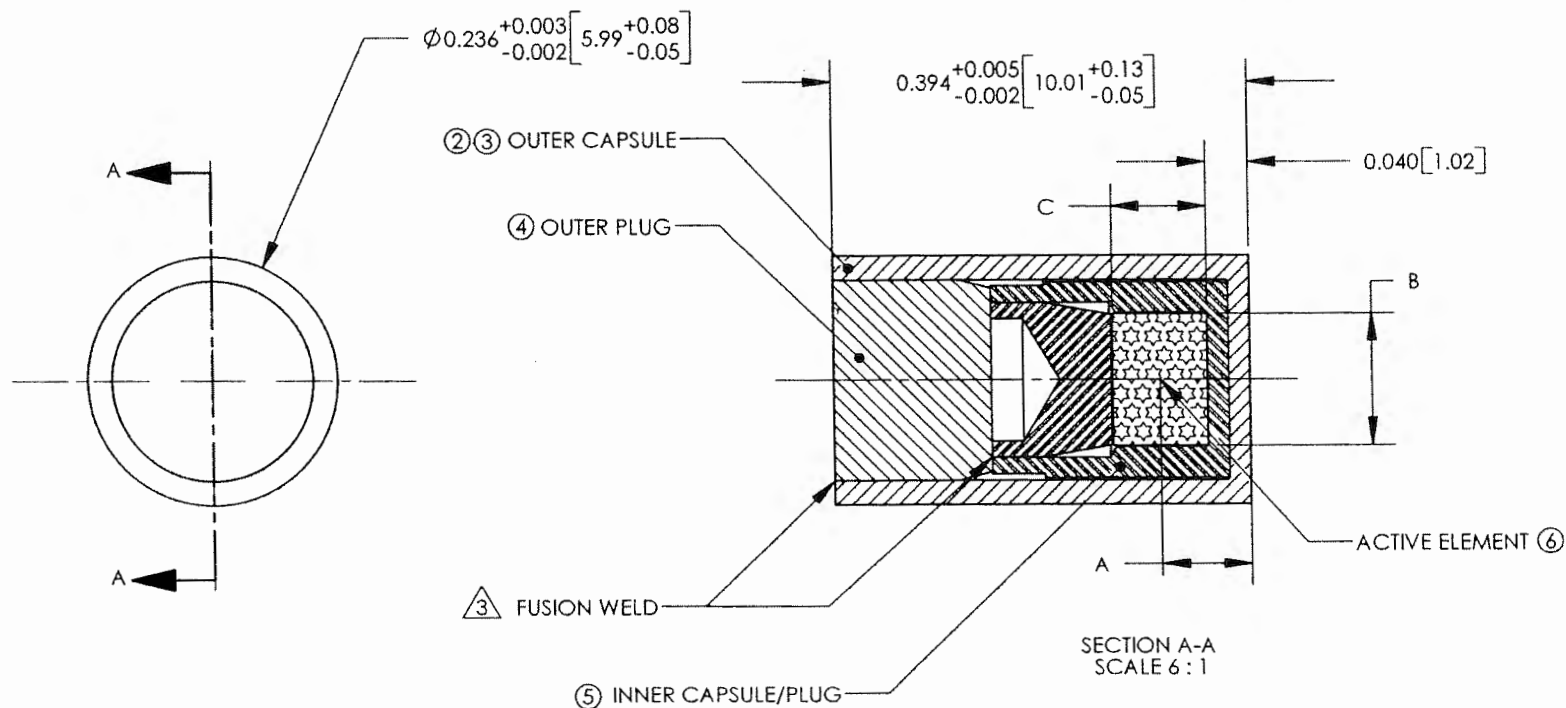
DRAWING NO. 3023

REV B

SHEET 3 OF 7

THIS DRAWING IS THE PROPERTY OF ECKERT & ZIEGLER ISOTOPE PRODUCTS
AND MAY NOT BE USED, REPRODUCED, PUBLISHED OR DISCLOSED TO OTHERS
WITHOUT EXPRESS AUTHORIZATION BY ECKERT & ZIEGLER ISOTOPE PRODUCTS.

	A3024-1	A3024-3
A(CENTER OF ACTIVITY)	0.085[2.16]	0.085[2.16]
B(ACTIVE DIAMETER)	0.125[3.18]	0.125[3.18]
C(ACTIVE LENGTH)	0.090[2.29]	0.090[2.29]
ENGRAVING	STANDARD	CUSTOMER SPECIFIC

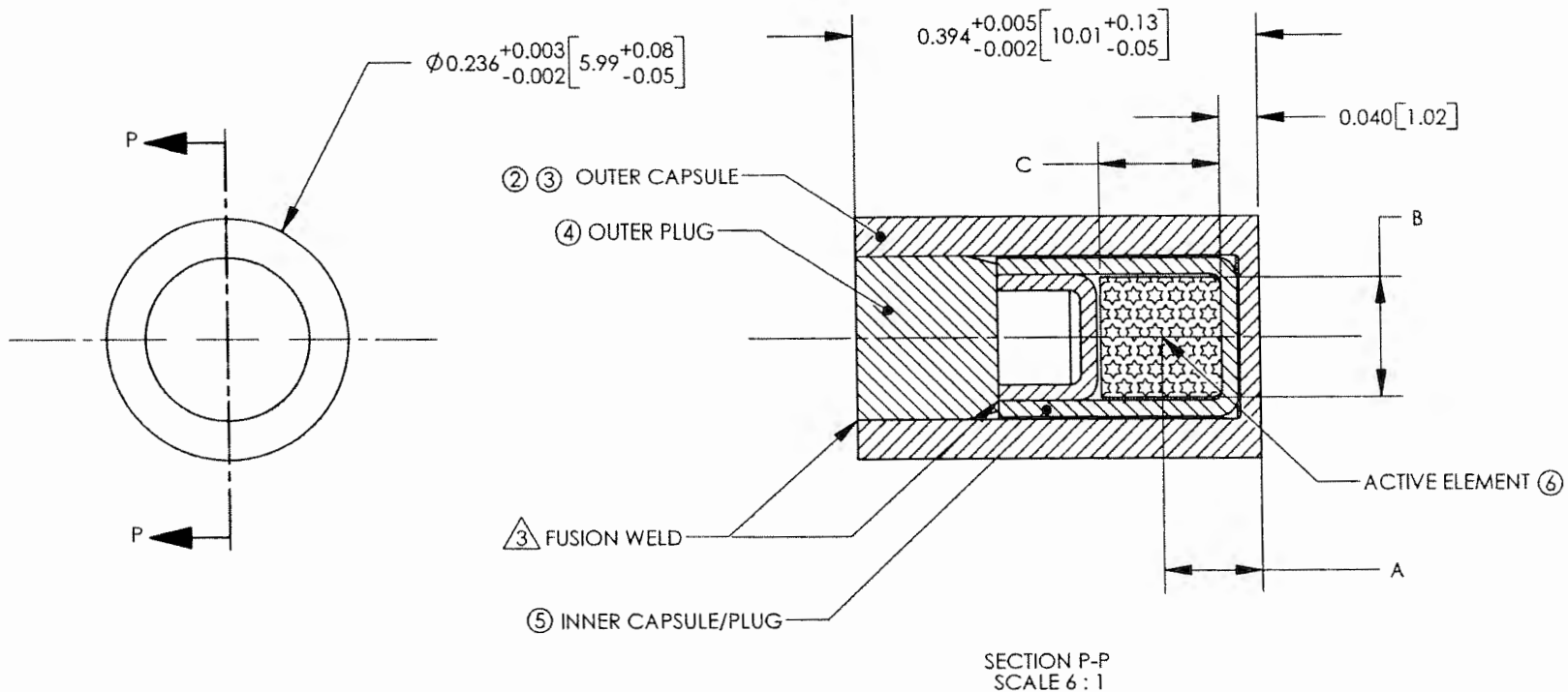


1. FUSION WELD AS REQUIRED 0.015 MINIMUM WELD DEPTH
 2. PACKAGE AND IDENTIFY PART NUMBER THEREON
 1. ASSEMBLE PER ENGINEERING DRAWING.
 NOTES: UNLESS OTHERWISE SPECIFIED

A3024-1/ A3024-3 ASSEMBLY

 Eckert & Ziegler Isotope Products VALENCIA, CALIFORNIA 91355	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN RLT		TITLE HEG SOURCE, 1cm LENGTH				
	TOLERANCES (UNLESS OTHERWISE SPECIFIED) X.XXX ± .002 INCH ANGULAR TOLERANCE OF 0°±30' X.XX ± .005 INCH FRACTIONAL DIMENSIONS ± 1/32" X.X ± .03 INCH REFERENCE DIMENSIONS (I) N/A X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX ALL DIMENSIONS ARE FINISHED DIMENSIONS		ME/CHECKER LF						
			ENGINEER RMD		SERIES TITLE INDUSTRIAL SOURCES, HIGH INTENSITY GAMMA AND NEUTRON				
THIS DRAWING IS THE PROPERTY OF ECKERT&ZIEGLER ISOTOPE PRODUCTS AND MAY NOT BE USED, REPRODUCED, PUBLISHED OR DISCLOSED TO OTHERS WITHOUT EXPRESS AUTHORIZATION BY ECKERT&ZIEGLER ISOTOPE PRODUCTS.		THIRD ANGLE PROJECTION 		SCALE NONE	SIZE A	CAGE CODE 32993	DRAWING NO. 3024	REV F	SHEET 4 OF 8

	A3024-2	A3024-4
A(CENTER OF ACTIVITY)	0.099[2.51]	0.099[2.51]
B(ACTIVE DIAMETER)	0.118[3.00]	0.118[3.00]
C(ACTIVE LENGTH)	0.118[3.00]	0.118[3.00]
ENGRAVING	STANDARD	CUSTOMER SPECIFIC



3. FUSION WELD AS REQUIRED 0.015 MINIMUM WELD DEPTH
 2. PACKAGE AND IDENTIFY PART NUMBER THEREON
 1. ASSEMBLE PER ENGINEERING DRAWING.
 NOTES: UNLESS OTHERWISE SPECIFIED

A3024-2/A3024-4 ASSEMBLY

 Eckert & Ziegler Isotope Products VALENCIA, CALIFORNIA 91355	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH-SIZES. METRIC UNITS [mm] ARE IN MILLIMETERS.		DRAWN RLT		TITLE HEG SOURCE, 1cm LENGTH					
	TOLERANCES (UNLESS OTHERWISE SPECIFIED) X.XXX ± .002 INCH ANGULAR TOLERANCE OF 0°±30' X.XX ± .005 INCH FRACTIONAL DIMENSIONS ± 1/32" X.X ± .03 INCH REFERENCE DIMENSIONS (I) N/A X. ± .1 INCH SURFACE ROUGHNESS μINCH MAX ALL DIMENSIONS ARE FINISHED DIMENSIONS		ME/CHECKER LF							
			ENGINEER RMD		SERIES TITLE INDUSTRIAL SOURCES, HIGH INTENSITY GAMMA AND NEUTRON					
THIS DRAWING IS THE PROPERTY OF ECKERT & ZIEGLER ISOTOPE PRODUCTS AND MAY NOT BE USED, REPRODUCED, PUBLISHED OR DISCLOSED TO OTHERS WITHOUT EXPRESS AUTHORIZATION BY ECKERT & ZIEGLER ISOTOPE PRODUCTS.	THIRD ANGLE PROJECTION 		SCALE NONE	SIZE A	CAGE CODE 32993	DRAWING NO. 3024		REV F	SHEET 5 OF 3	



U.S. Department of
Transportation

Pipeline and
Hazardous Materials
Safety Administration

East Building, PHH-23
1200 New Jersey Ave, SE
Washington, D.C. 20590

CERTIFICATE NUMBER: USA/0356/S-96

ORIGINAL REGISTRANT(S) :

Eckert & Ziegler Isotope Products
24937 Avenue Tibbitts
Valencia, CA, 91355
USA

Department of Energy
U.S. Department of Energy
1000 Independence Ave, SW
EM-60
Washington, DC, 20585
USA

J.L. Shepherd & Associates
1010 Arroyo Ave.
San Fernando, CA, 91340-1822
USA

Halliburton
3000 North Sam Houston Parkway, East
Houston, TX, 77032
USA

Stuart Hunt & Associates Ltd
20 Rayborn Crescent St.
Alberta, Canada, T8N 5C1
Canada

Tru-Tec Services, Inc.
11005 West Fairmont Parkway
La Porte, TX, 77571
USA

Troxler Electronic Laboratories
3008 Cornwallis Road
Research Triangle Park, NC, 27709
USA

U.S. Geologic Survey
Idaho Water Science Center, U.S. Geological Survey
Department of Interior
1955 N Fremont MS 4131
Idaho Falls, ID, 83415
USA