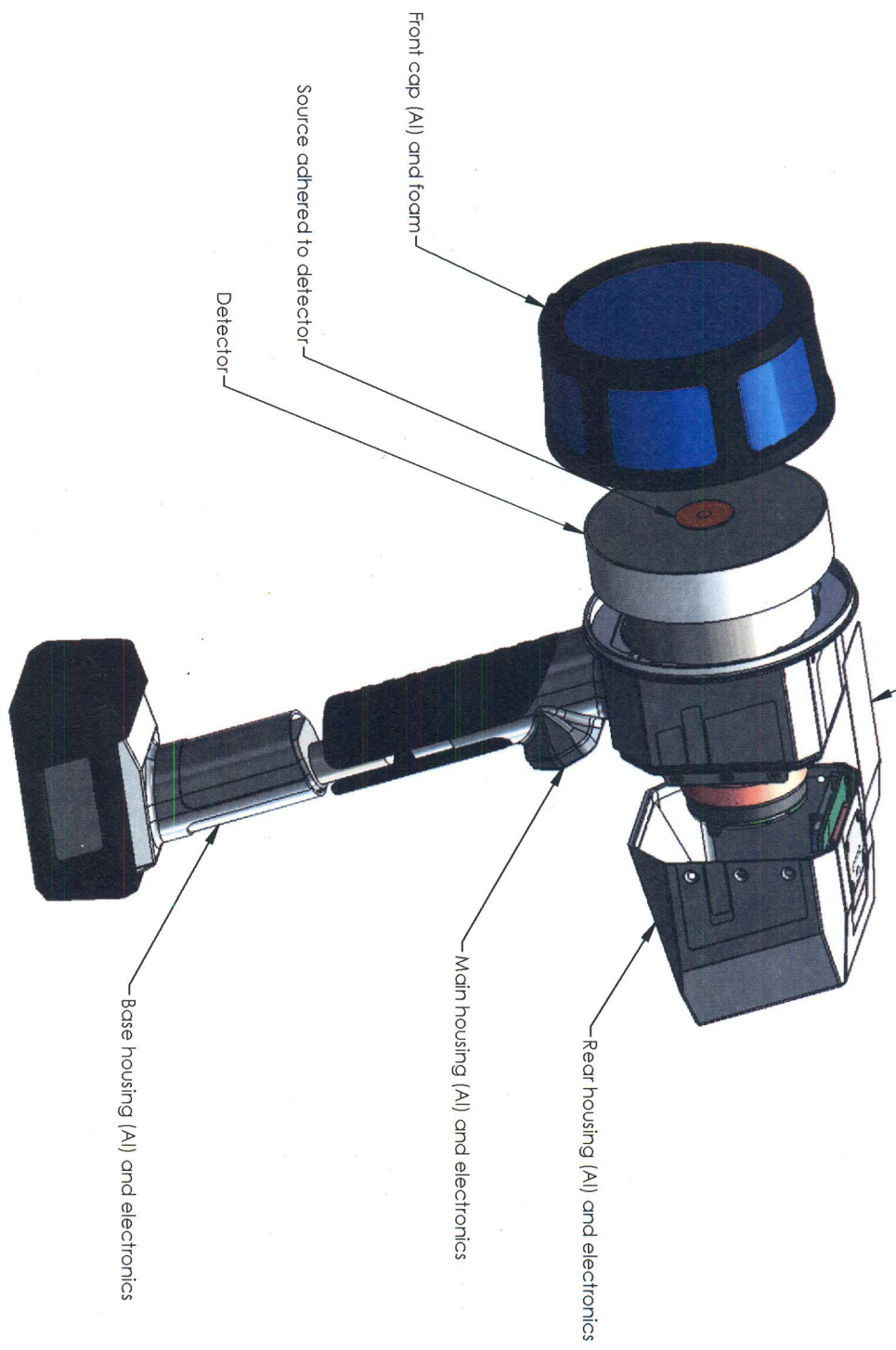




Product label  
(including radioactive material warning information)



REVISIONS					Various
ZONE	REV.	NUMBER	DATE	APPROVED	

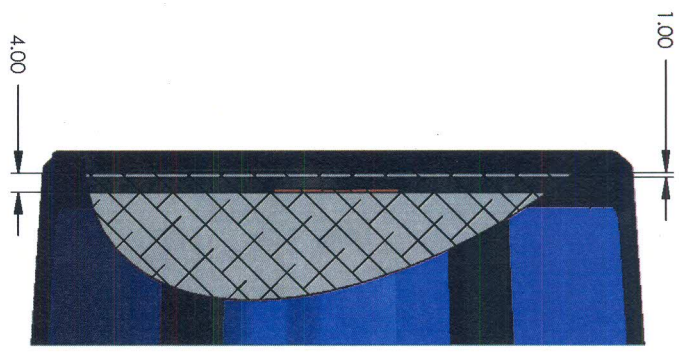
PROPRIETARY AND CONFIDENTIAL			UNLESS OTHERWISE SPECIFIED:		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ICX Inc.. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ICX Inc. IS PROHIBITED.			REMOVE BURRS AND SHARP EDGES: 0.50 mm MAX.		
			FILLETS & RADII: 0.50 mm MAX.		
			MACHINE SURFACES FLAT WITHIN 0.05 mm/mm		
			OTHER SURFACES FLAT WITHIN 0.10 mm/mm		
MATERIAL:			ANGULAR: $\pm 1.0^\circ$		
FINISH:			STANDARD FINISH: 3		
NEXT ASSY USED ON			NAME	INIT.	DATE
APPLICATION			AI - Housing		3/10/11
			Powder coat		3/10/11
			DRWN	J. Piedmore	3/10/11
			CHK'D	J. Piedmore	3/10/11
			APP'D	S. Reed	3/10/11



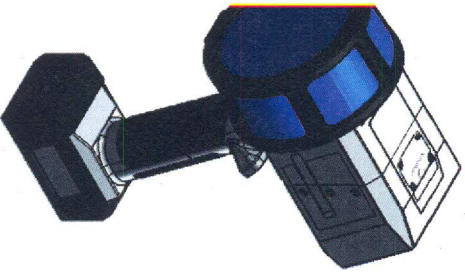
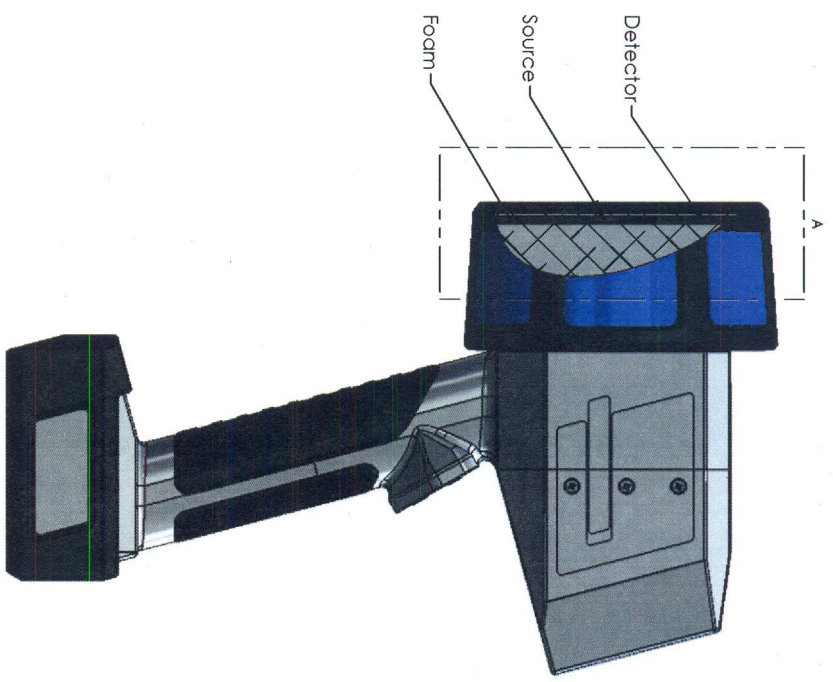
**ICx Radiation Inc.**  
100 Midland Rd.  
Oak Ridge, TN, 37830  
Tel.: 865-220-8700  
Fax: 865-813-0437

TITLE: radHunter A2 Series

SIZE	DWG. NO.:	REV.
A	radHunter A2 NRC	A-01+
SCALE:	ICx P/N: Various	SHEET 1 OF 2



DETAIL A  
SCALE 2:3



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**UNLESS OTHERWISE SPECIFIED:**

REMOVE BURRS AND SHARP EDGES: 0.50 mm MAX.

TOLERANCES:

DECIMAL:

X ±0.40 mm (0.016")

XX ±0.20 mm (0.008")

XXX ±0.10 mm (0.004")

ANGULAR: ±1.0°

STANDARD FINISH: 3

MATERIAL:

Al - Housing

FINISH:

Powder coat

APPLICATION	USED ON	DO NOT SCALE DRAWING	APPD	NAME	INT.	DATE
				DRWN	J. Predmore	3/10/11
				CHKD	J. Predmore	3/10/11
				S. Read		3/10/11

**ICx Radiation Inc.**  
100 Midland Rd.  
Oak Ridge, TN, 37830  
Tel.: 865-220-8700  
Fax: 865-813-0437

**radHunter A2 Series**

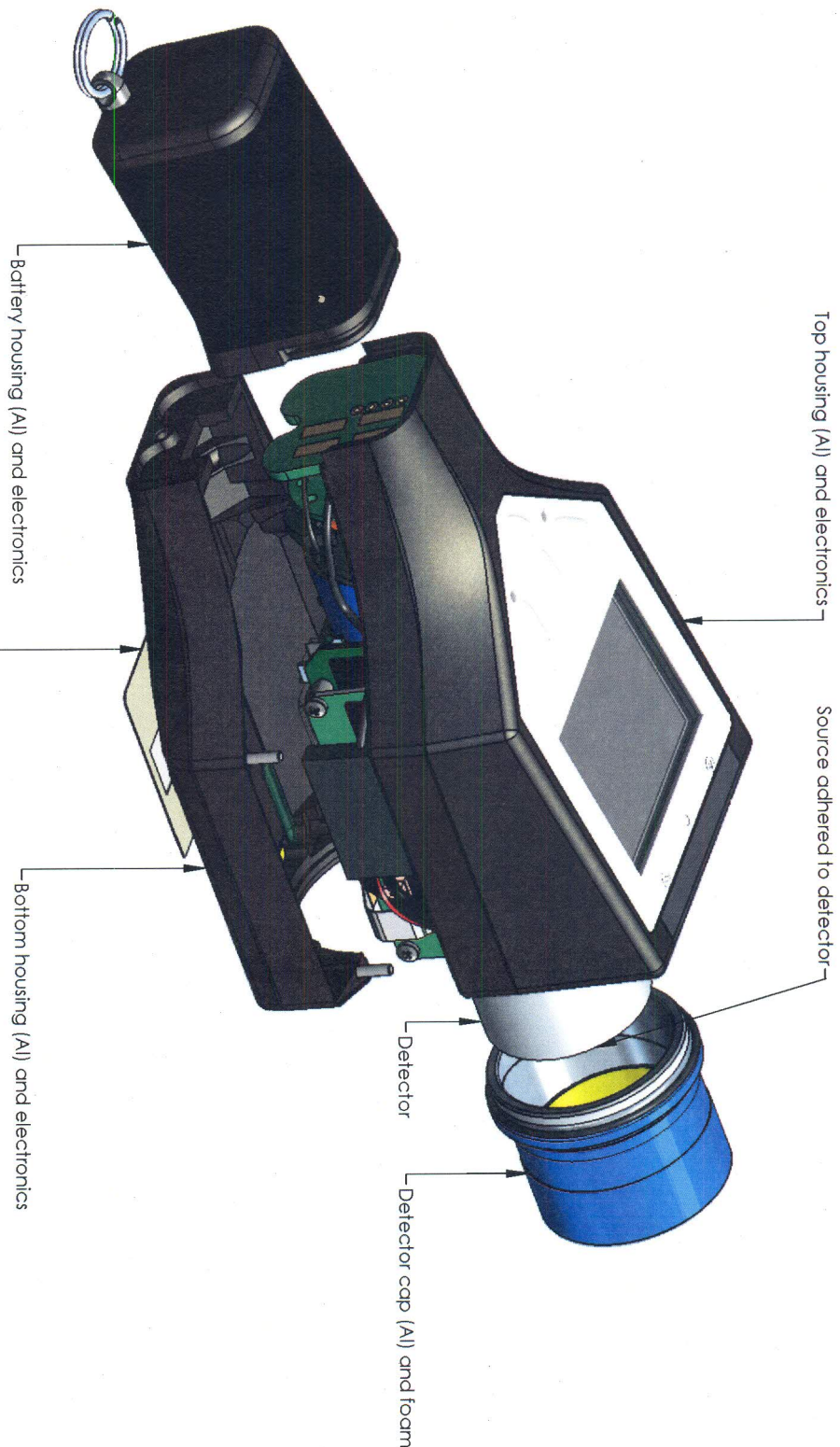
TITLE:	SIZE	DWG. NO.:	REV.
radHunter A2 Series	A	radHunter A2 NRC	A-01+
SCALE:	ICx P/N:	Various	SHEET 2 OF 2





REVISIONS			
ZONE	REV.	NUMBER	DATE

Various



**PROPRIETARY AND CONFIDENTIAL**

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ICX INC.. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ICX INC. IS PROHIBITED.

**UNLESS OTHERWISE SPECIFIED:**

REMOVE BURRS AND SHARP EDGES: 0.50 mm MAX.  
FILLET & RADIUS: 0.50 mm MAX.  
MACHINE SURFACES FLAT WITHIN 0.05 mm/mm  
OTHER SURFACES FLAT WITHIN 0.10 mm/mm

**DIMENSIONS ARE IN MILLIMETERS.**

TOLERANCES:  
DECIMAL:  
X.XX ±0.40 mm (0.016")  
X.XX ±0.20 mm (0.008")  
X.XX ±0.10 mm (0.004")  
ANGULAR: ±1.0°  
STANDARD FINISH: 3

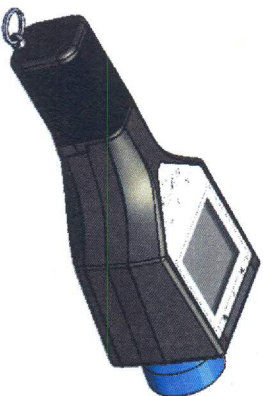
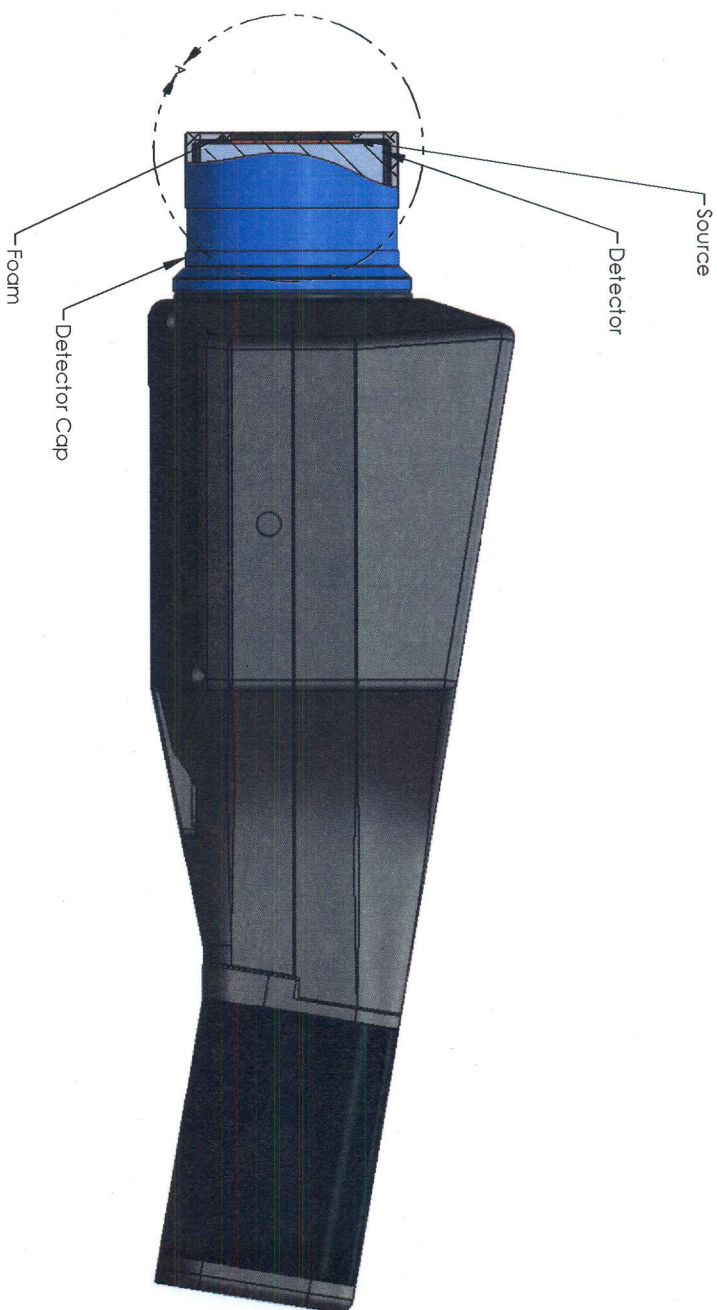
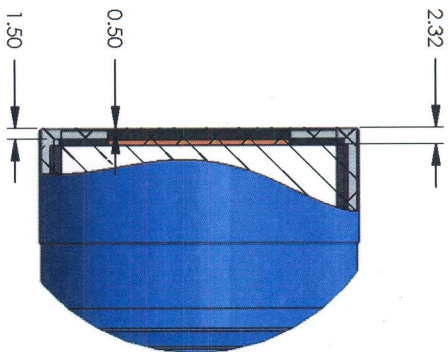
**ICx Radiation Inc.**  
100 Midland Rd.  
Oak Ridge, TN, 37830  
Tel.: 865-220-8700  
Fax: 865-813-0437

**IdentifINDER Series**

NAME	INT.	DATE	SIZE	DWG. NO.:	REV.
DRWN	J. Predmore	3/10/11	A	IdentifINDER Series NRC	A-01+
CHKD	J. Predmore	3/10/11			
APPD	S. Reed	3/10/11	SCALE:	ICX P/N: Various	SHEET 1 OF 2



THIRD  
ANGLE  
PROJ.



PROPRIETARY AND CONFIDENTIAL				UNLESS OTHERWISE SPECIFIED:			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ICX Inc.. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ICX Inc. IS PROHIBITED.				REMOVE BURRS AND SHARP EDGES: 0.50 mm MAX.			
				FILLETS & RADII: 0.50 mm MAX.			
				MACHINE SURFACES FLAT WITHIN 0.05 mm/mm			
				OTHER SURFACES FLAT WITHIN 0.10 mm/mm			
				ANGULAR: $\pm 10^\circ$ STANDARD FINISH: 3			
MATERIAL:				NAME	INIT.	DATE	
A1 - Housing				J. Piedmore		3/10/11	
FINISH:				CHK'D	J. Piedmore	3/10/11	
Powder coat				APP'D	S. Reed	3/10/11	
APPLICATION				DO NOT SCALE DRAWING			
NEXT ASSY				USED ON			
APPLICATION				DO NOT SCALE DRAWING			

TITLE: IdentifINDER Series

ICx Radiation Inc.  
100 Midland Rd.  
Oak Ridge, TN, 37830  
Tel.: 865-220-8700  
Fax: 865-813-0437

SIZE	DWG. NO.:	REV.
A	IdentifINDER Series NRC	A-01+
SCALE:	ICx P/N: Various	SHEET 2 OF 2



## U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 02

**MATERIALS LICENSE**

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<b>Licensee</b>  1. Spectrum Techniques, Inc.  2. 106 Union Valley Road Oak Ridge, TN 37830	In accordance with application dated March 26, 2001  3. License number 41-23845-01E is renewed in its entirety to read as follows:  4. Expiration date October 31, 2011  5. Docket No. 030-34126 Reference No.	
6. Byproduct, source, and/or special nuclear material  A. As specified in Section 30.71, Schedule B, 10 CFR Part 30	7. Chemical and/or physical form  A. Solid Sealed Sources or Liquid Standards and Solutions	8. Maximum amount that licensee may possess at any one time under this license  A. Not Applicable (See License Condition No.10)
9. Authorized use:  Pursuant to Section 32.18, 10 CFR Part 32, "Specific Domestic Licenses to Manufacture or Transfer Certain Items Containing Byproduct Material," the licensee is authorized to distribute licensed material to persons exempt from licensing pursuant to Section 30.18, 10 CFR Part 30, or equivalent provisions of the regulations of any Agreement State.		

**CONDITIONS**

10. This license does not authorize possession or use of licensed material.
11. The licensee is authorized to distribute only from its facility located at 106 Union Valley Road, Oak Ridge, TN.
12. The licensee shall submit periodic material transfer reports as specified in Section 32.20, 10 CFR Part 32.

## CONDITIONS

(Continued)

13. Except as specifically provided otherwise by this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated March 26, 2001; and  
B. Letter dated August 9, 2001.



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: October 1, 2001By: 

Susan L. Greene  
Materials Safety and Inspection Branch  
Division of Industrial and Medical Nuclear Safety  
Office of Nuclear Materials Safety and Safeguards



## **SPECTRUM TECHNIQUES Inc.**

106 Union Valley Road  
Oak Ridge, TN 37830 USA

Phone: 865-482-9948

Fax: 865-483-0473

E-mail: [sales@spectrumtechniques.com](mailto:sales@spectrumtechniques.com)

Web site: [www.spectrumtechniques.com](http://www.spectrumtechniques.com)

### *Certificate of Compliance*

This is to certify that the enclosed Check Source complies fully with USNRC Regulations 10CFR part 30.18 Exempt Quantities, does not exceed the activity as set forth in section 30.71 Schedule B and may be transferred to any individual free of specific licensing requirements. The package conforms to USDOT 49CFR 173.421, Postal Publication No. 6 (dated September 6, 1983) and IATA section 4.2 Identification (UN2910) Radioactive material, excepted package, limited quantity of material, N.O.S. (not otherwise specified), Class 7, section 10.5.9.4 calculating A2 value of radionuclide for packaging and transportation.

This is to certify that the enclosed Check Source was manufactured:

August, 2010

# Sample

At the time of manufacture, the source contained a nominal activity of 1.0 microcuries of Cs-137 which decays with a half-life of 30.2 years.

The source is of sealed construction and wipe tested for surface contamination and leakage.

*Larry Webb*

Larry Webb, Radioisotope Manager.

August, 2010

Dated:

## Radioactive Material Exempt Quantities (Per U.S. NRC & State Regulations)

This radioactive material conforms to the conditions and limitations specified for radioactive material in:

- 49CFR173.421
- 10CFR30,
- 10CFR30.71, Schedule B Exempt Quantities
- BS 5288/C11111

The radioactive material contained in the package is an exempt quantity from USNRC and/or Agreement State licensing requirements.

The radiation exposure rate at any point on the external surface of this package does not exceed 0.5 milli rem/hour.

No other hazard labeling and shippers declaration are required or authorized.

Radioactive Material — Not for Human Use —  
Introduction Into Foods, Beverages, Cosmetics, Drugs,  
or Medicinals, or Into Products Manufactured for  
Commercial Distribution is Prohibited —  
Exempt Quantities Should Not be Combined.

The quantities of radioactive material contained in these products is extremely small and present no known radiation hazard. However, it is always good practice to minimize exposure by following the basic principles of time, distance and shielding. Solid, sealed exempt quantity sources require no special handling but when working with liquid sources, gloves and laboratory coats are recommended.

Eating, drinking and smoking should be prohibited in areas where radioactive material is used or stored.

Use of radioactive material should be supervised by a responsible person in authorized areas. Exempt quantity products should be used only as intended and in accordance with instructions provided. All radioactive material should be securely stored when not in use.

These exempt quantity products may be disposed of in regular waste providing all radiation symbols have been removed or defaced. When disposing of liquid exempt quantities, it is recommended that they be flushed into the public sewer system diluted with large volumes of water.

Manufactured and Distributed by:  
**SPECTRUM TECHNIQUES LLC**  
106 Union Valley Road  
Oak Ridge, Tennessee 37830 USA  
Tel: 865-482-9937  
Fax: 865-483-0473  
E-mail: [sales@spectrumtechniques.com](mailto:sales@spectrumtechniques.com)  
Web Site: [www.spectrumtechniques.com](http://www.spectrumtechniques.com)

See back side for UN2910 shipping data / Dec 09

## UN2910 Radioactive Material Limited Quantity per DOT 173.435 (10-1-05) & IATA 10.4.2.1 (1-31-06)

This package conforms to the conditions and limitations specified shipping regulation in:

- USDOT CFR49 parts 100—185
- IATA Dangerous Goods Regulations;  
Section 4.2; "UN2910 Radioactive material,  
excepted package, limited quantity of material"  
Class 7, and Section 10.5.9.4 calculating A1 values  
of radionuclide for packaging and transporting
- Postal Publication No. 6 dated September 1983

The radiation exposure rate at any point on the external surface of this package does not exceed 0.5 mille rad/hour.

UN2910 labeling on package and shippers declaration. No other hazard labeling or shippers declaration required or authorized.

This package contains less than the DOT and IATA limits for exempt quantity radioactive material and UN2910 "Radioactive material, excepted package, limited quantity of material"

This package may contain one or more of the following isotopes, for contents in this package see enclosed invoice or packing list.

Isotopes	Max uCi per disk	Max uCi per box
Ba133	10	100
C14	10	100
Cd109	10	100
Co57	100	1000
Co60	1	10
Cs137	10	100
Eu152	1	10
Fe55	100	1000
I129	0.1	2.7
Mn54	10	100
Na22	10	100
Pb210	0.1	2.7
Po210	0.1	2.7
Sr90	0.1	2.7
Tl204	10	100
Zn65	10	100

See back side for NRC radiation data / Dec 09





Document #: WI 5009

Revision: Rev 0

**Title: Incorporating a 3nCi or 15nCi, Cesium 137 source into a identiFINDER**

**1.0 Purpose**

- 1.1 This work instruction explains how to incorporate a 3nCi or 15nCi (nanoCurie), Cesium-137 source into the identiFINDER product.

**2.0 Scope**

- 2.1 Applies to the identiFINDER product

**3.0 Responsibility**

- 3.1 Radiation Safety Officer is responsible for writing the procedures and ensuring they are accurate.  
3.2 Radiation Safety Officer is responsible for training technicians to carry out the tasks outlined in this work instruction.  
3.3 Technician is responsible for ensuring that the instructions are followed through.  
3.4 Radiation Safety Officer is responsible for carrying out regular inspections. Records of all surveys/inspections shall be kept on file in the Radiation Safety Office.

**4.0 Requirements**

- 4.1 radHUNTER parts.  
4.2 3nCi (nanoCurie), Cesium-137 source (part number 101539) or 15nCi (nanoCurie), Cesium-137 source (part number 103191). The activity of source would be based upon the model (refer to work order).  
4.3 Wipe test certificate for Cesium-137 source. The certificate must remain with the product documentation.  
4.4 ½ inch x ½ inch (approximately) piece of double sided adhesive tape (part number 103190).

**5.0 Definitions (Optional)**

**6.0 Procedure-Process-Work Instruction**

**6.1 Safety**

- 6.1.1 This equipment must be operated in accordance with local health and safety procedures.

**6.1.2 Electrical:**

- 6.1.2.1 Observe anti-static precautions in accordance with local controlled procedures.

**6.1.3 Radiation:**

- 6.1.3.1 All radioactive sources when not in use must be stored in the approved storage area.  
6.1.3.2 Personnel working with radioactive materials must be trained.  
6.1.3.3 To minimize exposure consider 'Time', 'Distance' and 'Shielding' (ALARA - As Low As Reasonably Achievable).  
6.1.3.4 Personnel monitors must be worn.

- 6.1.3.5 Care and security in accordance with U.S. NRC Regulations, State Tennessee Regulations and ICx Radiation, Inc. Radiation Protection program must be observed.**
- 6.1.3.6 When handling the Cesium-137 source, handle it from the edge to minimize exposure.**

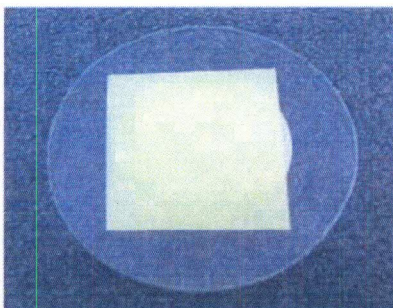
**6.2** Assembly of Cesium-137 source (The following must done at the final stage of the assembling process to minimize exposure):

**6.2.1** Sign out Cesium-137 source from the storage facility (before removing the source from stock, ensure that the activity noted on the source is the required amount...3nCi or 15nCi). Enter details in log (example below). Keep the wipe test certificate for the Cesium-137 source with product.

Radionuclide	Activity (nCi)	Source - Date of Manufacturer	Product Name	Product Serial Number	Date Signed Out	Name	Signature
Cs-137	15	1/31/2011	identiFINDER	123456-123456	2/1/2011	Read	

**6.2.2** Cut approximately a ½ inch x ½ inch piece of double sided adhesive tape.

**6.2.3** Attached a ½ inch x ½ inch (approximately) piece of double sided adhesive tape on the back side of the Cesium-137 source.



**6.2.4** Remove backing to double sided adhesive tape and attach the Cesium-137 source to the detector.





6.2.5 Complete assembly of product according to the applicable ISO work instructions.



7.0 Records:

7.1 Radioactive sources log


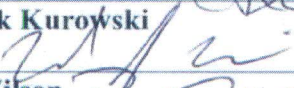
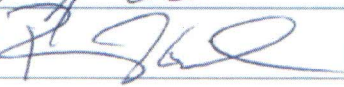
8.0 References:

- 8.1 U.S. NRC Regulations
- 8.2 U.S. NRC license 41-25639-01E
- 8.3 State Tennessee Regulations
- 8.4 State Tennessee license R-01097-B14
- 8.5 ICx Radiation, Inc. Radiation Protection Program

9.0 Revision History:

Rev.	Date	QCN #	Comment
0	03/10/2011	N/A	Initial Release

10.0 Approvals:

Radiation Safety Officer: Steven Read		Date: 03/10/2011
Production Manager: Nick Kurovski		Date: 03/10/2011
Quality Manager: Rick Wilson		Date: 03/10/2011



Document #: WI 5010

Revision: Rev 0

**Title: Incorporating a 3nCi, Cesium 137 source into a radHUNTER**

**1.0 Purpose**

- 1.1 This work instruction explains how to incorporate a 3nCi or 15nCi (nanoCurie), Cesium-137 source into the radHUNTER product.

**2.0 Scope**

- 2.1 Applies to the radHUNTER product

**3.0 Responsibility**

- 3.1 Radiation Safety Officer is responsible for writing the procedures and ensuring they are accurate.  
3.2 Radiation Safety Officer is responsible for training technicians to carry out the tasks outlined in this work instruction.  
3.3 Technician is responsible for ensuring that the instructions are followed through.  
3.4 Radiation Safety Officer is responsible for carrying out regular inspections. Records of all surveys/inspections shall be kept on file in the Radiation Safety Office.

**4.0 Requirements**

- 4.1 radHUNTER parts.  
4.2 3nCi (nanoCurie), Cesium-137 source (part number 101539) or 15nCi (nanoCurie), Cesium-137 source (part number 103191). The activity of source would be based upon the model (refer to work order).  
4.3 Wipe test certificate for Cesium-137 source. The certificate must remain with the product documentation.  
4.4 ½ inch x ½ inch (approximately) piece of double sided adhesive tape (part number 103190).

**5.0 Definitions (Optional)**

**6.0 Procedure-Process-Work Instruction**

**6.1 Safety**

- 6.1.1 This equipment must be operated in accordance with local health and safety procedures.

**6.1.2 Electrical:**

- 6.1.2.1 Observe anti-static precautions in accordance with local controlled procedures.

**6.1.3 Radiation:**

- 6.1.3.1 All radioactive sources when not in use must be stored in the approved storage area.  
6.1.3.2 Personnel working with radioactive materials must be trained.  
6.1.3.3 To minimize exposure consider 'Time', 'Distance' and 'Shielding' (ALARA - As Low As Reasonably Achievable).  
6.1.3.4 Personnel monitors must be worn.



- 6.1.3.5 Care and security in accordance with U.S. NRC Regulations, State Tennessee Regulations and ICx Radiation, Inc. Radiation Protection program must be observed.**
- 6.1.3.6 When handling the Cesium-137 source, handle it from the edge to minimize exposure.**

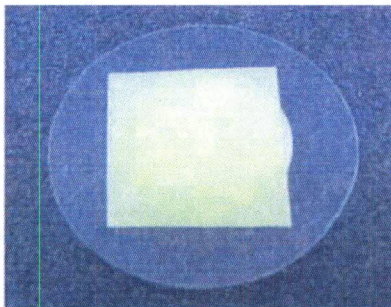
**6.2** Assembly of Cesium-137 source (The following must be done at the final stage of the assembling process to minimize exposure):

**6.2.1** Sign out Cesium-137 source from the storage facility (before removing the source from stock, ensure that the activity noted on the source is the required amount...3nCi or 15nCi). Enter details in log (example below). Keep the wipe test certificate for the Cesium-137 source with product.

Radionuclide	Activity (nCi)	Source - Date of Manufacturer	Product Name	Product Serial Number	Date Signed Out	Name	Signature
Cs-137	15	1/31/2011	radHUNTER	123456-123456	2/1/2011	Read	

**6.2.2** Cut approximately a ½ inch x ½ inch piece of double sided adhesive tape.

**6.2.3** Attached a ½ inch x ½ inch (approximately) piece of double sided adhesive tape on the back side of the Cesium-137 source.



**6.2.4** Remove backing to double sided adhesive tape and attach the Cesium-137 source to the detector.



6.2.5 Complete assembly of product according to the applicable ISO work instructions.



7.0 Records:

7.1 Radioactive sources log

8.0 References:

- 8.1 U.S. NRC Regulations
- 8.2 U.S. NRC license 41-25639-01E
- 8.3 State Tennessee Regulations
- 8.4 State Tennessee license R-01097-B14
- 8.5 ICx Radiation, Inc. Radiation Protection Program

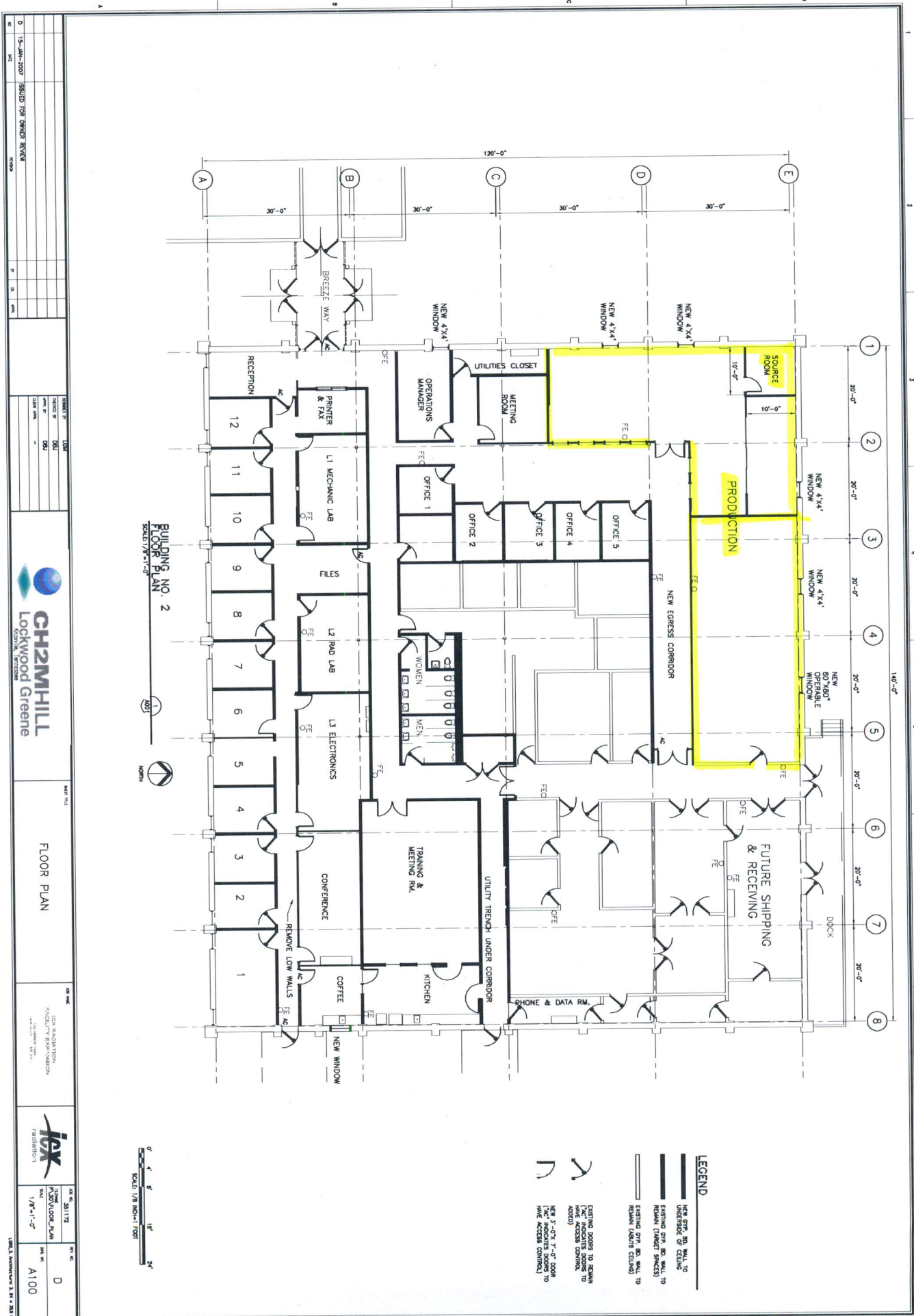
9.0 Revision History:

Rev.	Date	QCN #	Comment
0	03/10/2011	N/A	Initial Release

10.0 Approvals:


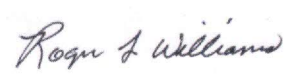
Radiation Safety Officer: Steven Read	Date: 03/10/2011
Production Manager: Nick Kurowski	Date: 03/10/2011
Quality Manager: Rick Wilson	Date: 03/10/2011





**TEST REPORT**

**Drop testing from 1 meter**

Report reference No. ....	: G1102023
Date of issue .....	: February 24, 2011
Testing laboratory .....	: Global Testing Laboratories, LLC
Address .....	: 3029 Gov. John Sevier Hwy
Testing location .....	: Same
Applicant .....	: ICx Radiation, Inc.
Address .....	: 100 Midland Road Oak Ridge, TN 37830 USA
Model	Identifinder
Serial #	3574-625
Product description	Handheld radiation detector
Standard.....	: Customer specified drop testing
Ratings	N/A
Test Report Form No. ....	: N/A
Procedure deviation .....	: N/A
Non-standard test method .....	: Drop testing from 1 meter
Number of pages (Report) .....	: 7
Number of pages (Attachments).....	: N/A
Compiled by: <u>Jeff Grahl</u>	Approved by: <u>Roger Williams</u>
(+ Signature) 	(+ Signature) 



## **Drop testing from 1 meter**

### **Test Description**

The unit under test was dropped from a height of 1 meter on all six sides of the unit using a drop test machine. The unit's drop orientation is described by the side of the unit that was in contact with the drop test machine. The customer's requirements were that the low-level source inside was contained and that the unit functioned properly after the test.

### **Test Results**

The unit was dropped from a height of 1 meter on to its front, back, right side, left side, top, and bottom. The unit showed no visible signs of damage, the source was contained within the unit, and the unit functioned properly after the test.

Please see attached photos.





