



National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

U.S. Army Radiation Standards Laboratory / Radiation Standards Lab.

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200715-0

NVLAP Code: 20/A01 ANSI/NCSL Z540-1-1994; Part 1 Compliant

IONIZING RADIATION

NVLAP Code: 20/I01
 Dosimetry of X-Rays, Gamma Rays, and Electrons

Calibration of Survey Instruments

Calibration Category	Radiation Type	Emission Rate Range	Reference Field Uncertainty (\pm) in % ^{notes 1,2}
Alpha	²³⁸ Pu	2 x 10 ⁶ counts / min	2.5

Calibration Category	Radiation Type	Exposure Rate Range ^{note 3}	Reference Field Uncertainty (\pm) in % ^{notes 1,2}
Gamma	¹³⁷ Cs	0.05 mR/hr to 5000 R/hr	3.0
X-Ray	M30	20 to 200 R/hr	3.0
	M60	1.5 to 300 R/hr	3.0
	M100	1.5 to 300 R/hr	3.0
	M150	2.5 to 400 R/hr	3.0
	H150	0.3 to 15 R/hr	3.0
	S75	50 to 500 R/hr	3.0
	HK10	15 to 100 R/hr	3.0
	HK20	25 to 250 R/hr	3.0
HK30	20 to 200 R/hr	3.0	

2009-07-01 through 2010-06-30

Effective dates

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HK60	4.0 to 150 R/hr	3.0
HK100	4.0 to 150 R/hr	3.0
HK200	10 to 400 R/hr	3.0
HK250	15 to 500 R/hr	3.0
HK280	15 to 500 R/hr	3.0
HK300	15 to 500 R/hr	3.0
LK10	0.15 to 0.8 R/hr	3.0
LK20	0.4 to 2.5 R/hr	3.0
LK30	0.04 to 0.4 R/hr	3.0
LK35	0.075 to 1.0 R/hr	3.0
LK55	0.015 to 0.5 R/hr	3.0
LK70	0.04 to 0.4 R/hr	3.0
LK100	0.01 to 0.4 R/hr	3.0
LK125	0.0008 to 0.4 R/hr	3.0
LK170	0.0005 to 0.4 R/hr	3.0
LK210	0.005 to 0.25 R/hr	3.0
LK240	0.0015 to 0.3 R/hr	3.0
NS10	1.5 to 10 R/hr	3.0
NS15	1.0 to 8.0 R/hr	3.0
NS20	1.5 to 15 R/hr	3.0
NS25	1.5 to 15 R/hr	3.0
NS30	1.0 to 10 R/hr	3.0
NS40	0.1 to 4.0 R/hr	3.0
NS60	0.2 to 8.0 R/hr	3.0
NS80	0.5 to 5.0 R/hr	3.0
NS100	0.04 to 2.0 R/hr	3.0
NS120	0.2 to 2.0 R/hr	3.0
NS150	0.3 to 10 R/hr	3.0
NS200	0.2 to 5.0 R/hr	3.0
NS250	0.15 to 5.0 R/hr	3.0
NS300	0.25 to 5.0 R/hr	3.0
WS60	0.5 to 20 R/hr	3.0
WS80	1.0 to 40 R/hr	3.0
WS110	0.75 to 25 R/hr	3.0

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WS150	1.5 to 50 R/hr	3.0
WS200	2.0 to 100 R/hr	3.0
WS250	2.5 to 100 R/hr	3.0
WS300	3.0 to 150 R/hr	3.0

Irradiation of Personnel Dosimeters

<i>Calibration Category</i>	<i>Radiation Type</i>	<i>Nominal Range</i>	<i>Reference Field Uncertainty (±) in %</i> ^{notes 1,2}
Gamma	¹³⁷ Cs	>0.03	3.0
X-Ray	M30	>0.03	3.0
	M60	>0.03	3.0
	M100	>0.03	3.0
	M150	>0.03	3.0
	H150	>0.03	3.0
	S75	>0.03	3.0
	HK10	>0.03	3.0
	HK20	>0.03	3.0
	HK30	>0.03	3.0
	HK60	>0.03	3.0
	HK100	>0.03	3.0
	HK200	>0.03	3.0
	HK280	>0.03	3.0
	HK300	>0.03	3.0
	LK10	>0.03	3.0
	LK20	>0.03	3.0
	LK30	>0.03	3.0
	LK35	>0.03	3.0
	LK55	>0.03	3.0
	LK70	>0.03	3.0
LK100	>0.03	3.0	
LK125	>0.03	3.0	
LK170	>0.03	3.0	
LK210	>0.03	3.0	

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LK240	>0.03	3.0
NS10	>0.03	3.0
NS15	>0.03	3.0
NS20	>0.03	3.0
NS25	>0.03	3.0
NS30	>0.03	3.0
NS40	>0.03	3.0
NS60	>0.03	3.0
NS80	>0.03	3.0
NS100	>0.03	3.0
NS120	>0.03	3.0
NS150	>0.03	3.0
NS200	>0.03	3.0
NS250	>0.03	3.0
NS300	>0.03	3.0
WS60	>0.03	3.0
WS80	>0.03	3.0
WS110	>0.03	3.0
WS150	>0.03	3.0
WS200	>0.03	3.0
WS250	>0.03	3.0
WS300	>0.03	3.0

Irradiation of Thermoluminescent Dosimeters and Electronic Dosimeters

<i>Calibration Category</i>	<i>Radiation Source Type</i>	<i>Absorbed Dose Rate</i>	<i>Reference Field Uncertainty (±) in %</i> ^{notes 1,2}
Beta	⁹⁰ SrY	(0.6 to 25)μGy/sec	2.5
	⁸⁵ Kr	(0.6 to 25)μGy/sec	2.5
	¹⁴⁷ Pm	(0.6 to 25)μGy/sec	2.5

NVLAP Code: 20/I04

Radioactive Sources

Radionuclide Source Calibration

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Radioisotope	Nominal Range in Bq ^{note 3}	Best Uncertainty (±) in % ^{notes 1,2}
²³⁸ Pu	to 10 ⁶	2.5
²³⁹ Pu	to 10 ⁶	2.5
²⁴¹ Am	to 10 ⁶	2.5

Gamma / X-Ray Source Calibration for Air Kerma Rate

Radioisotope / Beam Code	Range ^{note 3}	Best Uncertainty (±) in % ^{notes 1,2}
¹³⁷ Cs ^{note 4}	0.05 mR/hr to 5000 R/hr	3.0
¹³⁷ Cs ^{notes 4 and 5}	0.1 mR/hr to 600 R/hr	4.3
⁶⁰ Co	0.05 mR/hr to 1000 R/hr	3.0

NIST Beam Codes

M30, M60, M100 M150, H150, S75	0.3 to 400 R/hr	3.0
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ISO Beam Codes

All HK, LK, NS, WS	0.5 mR/to 500 R/hr	3.0
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Nuclear Counting Category

Gas Proportional

Radioisotope	Activity Range in Disintegrations per second	Reference Uncertainty (±) in % ^{note 1}
Alpha ²⁴¹ AM	(3.7 to 1.4 E3)s ⁻¹	15
Beta ⁹⁰ SrY	(185 to 3.2 E3)s ⁻¹	15
Gamma ¹³⁷ Cs	(185 to 776)s ⁻¹	15
Gamma ⁶⁰ Co	(81 to 185)s ⁻¹	15

Liquid Scintillation

Radioisotope	Activity Range in Disintegration per second	Reference Uncertainty (±) in % ^{note 1}
Beta ³ H ^{note 6}	(5 to 10)s ⁻¹	15

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Beta ^{63}Ni

(5 to 10)s⁻¹

15

1. Represents an expanded uncertainty using a coverage factor, $k = 2$, at an approximate level of confidence of 95 %.
2. Uncertainties are valid for nominal intensity range listed.
3. For calibration outside of nominal intensity range shown, uncertainties would be determined commensurate with parameters of the reference field calibration.
4. This capability includes off-site calibration service, as limited by influences of operating environment.
5. Enclosed calibration range.
6. Reference material is tritium in water.

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