









Detectors

Alpha

Model	Application	Detector Type	Area (active/open)	Window	Efficiency (4π)	Back-ground	Operating Voltage (Vdc)	Part Number
 43-1	contamination survey	scintillation, ZnS(Ag)	83 cm ² / 75 cm ²	0.8 mg/cm ²	35% for ²³⁹ Pu	3 cpm or less	500-1200	47-1516
 43-2	contamination survey	scintillation, ZnS(Ag)	12 cm ² / 9.7 cm ²	0.8 mg/cm ²	30% for ²³⁹ Pu, 30% for ²³⁰ Th	3 cpm or less	500-1200	47-1517
 43-40-2	contamination survey	air proportional	239 cm ² / 188 cm ²	0.4 mg/cm ²	10% for ²³⁹ Pu	3 cpm or less	altitude dependent 1875-2050	47-3434
 43-40-3	contamination survey	air proportional	320 cm ² / 253 cm ²	0.4 mg/cm ²	10% for ²³⁹ Pu	3 cpm or less	altitude dependent 1875-2050	47-3435
 43-92	contamination survey	scintillation, ZnS(Ag)	100 cm ² / 88 cm ²	0.8 mg/cm ²	20% for ²³⁹ Pu	3 cpm or less	500-1200	47-2555
 43-44-1	contamination survey	air proportional	154 cm ² / 100 cm ²	0.4 mg/cm ²	8% for ²³⁹ Pu	3 cpm or less	altitude dependent 1875-2050	47-2385
 43-5	contamination survey	scintillation, ZnS(Ag)	76 cm ² / 50 cm ²	0.8 mg/cm ²	13% for ²³⁹ Pu	3 cpm or less	500-1200	47-1521
 43-65	contamination survey	scintillation, ZnS(Ag)	63 cm ² / 50 cm ²	0.8 mg/cm ²	17% for ²³⁹ Pu, 17% for ²³⁰ Th	3 cpm or less	500-1200	47-1441



Detectors

Gamma



Model	Application	Detector Type	Area (Active/Open)	Window	Efficiency (4 π)	Linear Range w DTC	Bkg (cpm)	Sensitivity (cpm)	Dead Time	Energy Response	Operating Voltage Vdc	Part Number
 44-3	¹²⁹ I, low energy gamma survey 10-60 keV	1 in. dia x 1 mm thick NaI(Tl)	5 cm ² / 5 cm ²	18.4 mg/cm ²	33.5% ⁻¹²⁵ I, 18% ⁻¹²⁹ I	N/A	< 350	675 μR/hr (¹²⁵ I)	≈ 5 μsec	energy dependent	500-1200	47-1533
 44-17	¹²⁵ I, low energy gamma survey 10-200 keV	2 in. dia x 2 mm thick NaI(Tl)	17.8 cm ² / 17.8 cm ²	43 mg/cm ²	33.5% ⁻¹²⁵ I, 22% ⁻¹²⁹ I	N/A	< 1500	2500 μR/hr (¹²⁵ I)	≈ 5 μsec	energy dependent	500-1200	47-1547
 44-2	gamma survey, 50 keV-1.5 MeV	1 in. dia x 1 in. thick NaI(Tl)	N/A	N/A	3.8% (Cs-137)	200 μSv (20 mR/h)	1900	175 μR/hr (¹³⁷ Cs)	≈ 5 μsec	energy dependent	500-1200	47-1532
 44-10	gamma survey, 50 keV-3.0 MeV	2 in. dia x 2 in. thick NaI(Tl)	N/A	N/A	11.2% (Cs-137)	50 μSv (5 mR/h)	9750	900 μR/hr (¹³⁷ Cs)	≈ 5 μsec	energy dependent	500-1200	47-1540
 44-62	gamma survey, 50 keV-1.5 MeV	0.5 in. dia x 1 in. thick NaI(Tl)	N/A	N/A	3.8% (Cs-137)	500 μSv (50 mR/h)	600	49 μR/hr (¹³⁷ Cs)	≈ 5 μsec	energy dependent	500-1200	47-1238
 44-11	gamma survey	2 in. dia x 2 in. thick NaI(Tl), integral line	N/A	N/A	11.2% (Cs-137)	50 μSv (5 mR/h)	9750	900 μR/hr (¹³⁷ Cs)	≈ 5 μsec	energy dependent	500-1200	47-1541
 44-20	gamma survey	3 in. dia x 3 in. thick NaI(Tl), integral line	N/A	N/A	11.5% (Cs-137)	200 μSv (20 mR/h)	23,000	2300 μR/hr (¹³⁷ Cs)	≈ 5 μsec	energy dependent	500-1200	47-1104
 44-183	shielded directional gamma survey	GM, energy compensated	N/A	N/A	TBD	1 mR/hr-10 R/hr	10:1 ratio front to back	100 mR/hr	≈ 50 μsec	± 15%	550	47-3758
 133-2	gamma survey, dose rate	GM, energy compensated	N/A	N/A	TBD	0.1 mR/hr-1 R/hr	≈ 12 @ 10 μR/hr	1000 mR/hr	≈ 50 μsec	± 25%	550	47-1717
 133-4	gamma survey, dose rate	GM, energy compensated	N/A	N/A	TBD	1 mR/hr-10 R/hr	≈ 1 @ 10 μR/hr	100 mR/hr	≈ 50 μsec	± 15%	550	47-1674
 133-6	gamma survey	GM, energy compensated	N/A	N/A	N/A	4 mR/hr-40 R/hr	< 1	18 mR/hr	≈ 50 μsec	± 15%	550	47-1718

Detectors





Low Energy Gamma

Model	Application	Detector Type	Area (Active/Open)	Window	Efficiency (4 π)	Bkg (cpm)	Operating Voltage Vdc	Part Number
 44-206	low-energy gamma survey	0.025 cm (0.010 in.) thick rectangular plastic scintillator	100 cm ² / 88 cm ²	1.2 mg/cm ² aluminized polyester	25% for ²⁴¹ AmBe, 2.89% for ⁵⁵ Fe	≤ 3000	500-1500	47-4087
 44-210	Alpha Survey	scintillator, ZnS (Ag)	83 cm ² / 75 cm ²	1.2 mg/cm ² metalized polyester (1.3 mg/cm ² recommended for outdoor use)	ALPHA: 33% for ²³⁹ Pu	≤ 3	500-1200	47-4104

Beta





Model	Application	Detector Type	Area (Active/Open)	Window	Efficiency (4 π)	Bkg (cpm)	Operating Voltage Vdc	Part Number
 44-1	survey, sample counting	1.7 in. dia x 0.01 in. thick plastic scintillator	12 cm ² / 12 cm ²	1.2 mg/cm ²	7%– ¹⁴ C	100 in 10 μR/hr	500–1200	47-1531
 44-142	contamination survey	0.01 in. thick plastic scintillator	100 cm ² / 88 cm ²	1.2 mg/cm ²	4%– ¹⁴ C, 30%– ⁹⁰ Sr/ ⁹⁰ Y, 20%– ⁹⁹ Tc	≤ 300 in 10 μR/hr	500–1200	47-3161

Neutron





Model	Application	Detector Type	Bkg	Sensitivity (cpm)	Energy Response	Operating Voltage Vdc	Part Number
 42-31H	neutron survey	³ He proportional with 9 in. polyethylene moderator	gamma rejection ≤ 10 cpm through 10 R/hr	100 mrem/hr (²⁴¹ AmBe)	follows RPG curve for neutron dose from thermal to 12 MeV	1000-1200	47-3583
 42-41L	neutron survey	Prescila, proton recoil scintillator	gamma rejection ≤ 400 cpm through 100 mR/hr (¹³⁷ Cs)	350 mrem/hr (²⁴¹ AmBe)	follows RPG curve for neutron dose from thermal to 100 MeV	500–700	47-3309
 42-5	neutron survey	4 mm x 4 mm ⁶ LiI crystal	10 cpm or less through 100 mR/hr	typically 45 cpm/mrem/hr (AmBe) (with 25.4 cm [10 in.] moderator)	thermal to approximately 12 MeV	400-900	47-1505
 42-30H	wall mount proportional neutron detector	2 Atm ³ H tube LND 25185 or equivalent	typically 2 cpm/mSv/h (200 cpm/mrem/hr) (²⁴¹ AmBe fast neutrons)	typically 2 cpm/mSv/h (200 cpm/mrem/hr) (²⁴¹ AmBe fast neutrons)	follows the RPG curve for neutron dose	1200	47-3582

Detectors

Alpha/Beta








Model	Application	Detector Type	Area (Active/Open)	Window	Efficiency (4 π)	Bkg	Crosstalk	Operating Voltage Vdc	Part Number
 43-1-1	contamination survey	ZnS(Ag) on 0.010 in. plastic scintillator	83 cm ² / 75 cm ²	1.2 mg/cm ² metalized polyester	30% ⁻²³⁹ Pu, 30% ⁻⁹⁰ Sr/ ⁹⁰ Y, 4% ⁻¹⁴ C	alpha: < 3 cpm, beta: ≤ 300 cpm	alpha-beta: < 10%, beta-alpha: < 1%	500–1200	47-2336
 43-2-2	contamination survey	ZnS(Ag) on 0.010 in. plastic scintillator	12 cm ² / 12 cm ²	1.2 mg/cm ² metalized polyester	25% ⁻²³⁹ Pu, 20% ⁻⁹⁰ Sr/ ⁹⁰ Y, 5% ⁻¹⁴ C	alpha: < 3 cpm, beta: ≤ 50 cpm	alpha-beta: < 10%, beta-alpha: < 1%	500–1200	47-2003
 43-93	contamination survey	ZnS(Ag) on 0.010 in. plastic scintillator	100 cm ² / 88 cm ²	1.2 mg/cm ² metalized polyester	20% ⁻²³⁹ Pu, 20% ⁻⁹⁰ Sr/ ⁹⁰ Y, 15% ⁻⁹⁹ Tc	alpha: < 3 cpm, beta: ≤ 300 cpm	alpha-beta: < 10%, beta-alpha: < 1%	500–1200	47-2556
 43-68	contamination survey	gas proportional, P-10	126 cm ² /100 cm ²	0.8 mg/cm ² metalized polyester	Optimized for alpha or beta: 20% ⁻²³⁹ Pu, 15% ⁻¹⁴ C, 30% ⁻⁹⁹ Tc, 30% ⁻⁹⁰ Sr/ ⁹⁰ Y < 1% gamma, simultaneous alpha-beta: 17.5% ⁻²³⁹ Pu, 20% ⁻⁹⁹ Tc, 20% ⁻⁹⁰ Sr/ ⁹⁰ Y	alpha: < 7 cpm, beta-gamma: approximately 350 cpm (10 μR/hr field)	alpha-beta: < 10%, beta-alpha: < 1%	alpha: 1100–1400 beta-gamma: 1600–1800	47-2005

Alpha-Beta-Gamma

Model	Application	Detector Type	Area (Active/Open)	Window	Efficiency (4 π)	Bkg	Sensitivity (¹³⁷ Cs) (cpm)	Operating Voltage Vdc	Part Number
 44-7	survey, sample counting	GM, end window	6 cm ² / 5 cm ²	1.7 ± 0.3 mg/cm ² mica	2% ⁻¹⁴ C, 10% ⁻⁹⁰ Sr/ ⁹⁰ Y, 7% ⁻⁹⁹ Tc, 7% ⁻²³⁹ Pu	40 cpm	2100 mR/hr *energy dependent	900	47-1536
 44-9	survey, sample counting	GM, pancake	15 cm ² / 12 cm ²	1.7 ± 0.3 mg/cm ² mica	5% ⁻¹⁴ C, 22% ⁻⁹⁰ Sr/ ⁹⁰ Y, 19% ⁻⁹⁹ Tc, 32% ⁻³² P, 15% ⁻²³⁹ Pu	60 cpm	3300 mR/hr *energy dependent	900	47-1539
 44-40	shielded survey, sample counting	GM, pancake with lead housing	15 cm ² / 12 cm ²	1.7 ± 0.3 mg/cm ² mica	5% ⁻¹⁴ C, 22% ⁻⁹⁰ Sr/ ⁹⁰ Y, 19% ⁻⁹⁹ Tc, 32% ⁻³² P, 15% ⁻²³⁹ Pu	25 cpm	3300 mR/hr *energy dependent	900	47-1538
 44-88	survey, sample counting	GM, pancake	15 cm ² / 12 cm ²	1.7 ± 0.3 mg/cm ² mica	5% ⁻¹⁴ C, 22% ⁻⁹⁰ Sr/ ⁹⁰ Y, 19% ⁻⁹⁹ Tc, 32% ⁻³² P, 15% ⁻²³⁹ Pu	60 cpm	3300 mR/hr *energy dependent	900	47-2356

Detectors

Beta-Gamma

Model	Application	Detector Type	Area (Active/Open)	Window	Efficiency (4 π)	Bkg	Sensitivity (cpm per mR/hr)	Energy Response	Operating Voltage Vdc	Part Number
 44-6*	survey, exposure measurements	GM	N/A	30–45 mg/cm ² stainless steel wall, housing: 1000 mg/cm ²	N/A	closed 20 cpm, open 25 cpm	1200 mR/hr (¹³⁷ Cs)	energy dependent	900	47-1535
 44-38*	exposure measurements	GM, energy compensated	N/A	30–45 mg/cm ² stainless steel wall, housing: aluminum	N/A	closed: 20 cpm, open: 25 cpm	1200 mR/hr (¹³⁷ Cs)	± 15% from 50 keV-1.25 MeV	900	47-1588
 44-92	contamination survey	Sealed gas proportional, Xenon	169 cm ² / 140 cm ²	6 mg/cm ² titanium	10%– ¹⁴ C 13%– ⁹⁰ Tc 24%– ³⁶ Cl 26%– ⁹⁰ Sr/ ⁹⁰ Y 3%– ¹²⁹ I 1.6%– ⁵⁷ Co 1.2%– ⁵⁵ Fe 10%– ²³⁹ Pu	700 cpm	36,000 mR/hr (⁶⁰ Co)	energy dependent	1600–1900	47-2362
 44-110	tritium surface contamination	gas flow, P-10	126 cm ² / 100 cm ²	windowless	25%– ³ H	400 cpm	N/A	energy dependent	1700	47-2585
 44-21	low energy beta-gamma	1 in. dia x 1 mm thick NaI adhered to a 0.010 in. thick plastic scintillator	5.1 cm ² / 5.1 cm ²	3.4 mg/cm ²	38%– ¹²⁵ I 5%– ¹⁴ C 28%– ³² P	450 cpm	20 kepm/mR/hr (¹³⁷ Cs)	energy dependent	500–1200	47-1560
 44-98	surveying, sample counting	1 in. dia x 1 mm thick BGO	5 cm ² / 5 cm ²	1.2 mg/cm ²	10%– ¹⁴ C 20%– ¹²⁵ I	650 cpm	N/A	energy dependent	500–1200	47-2465
 44-172	beta & low energy gamma	1 in. dia x 1 mm thick YSO	5 cm ² / 5 cm ²	1.2 mg/cm ²	25%– ¹²⁵ I 8%– ¹⁴ C 7%– ⁵⁵ Fe 2.5%– ¹³⁷ Cs 11.7%– ²⁴¹ Am 7.4%– ⁵⁷ Co	300 cpm	N/A	5-145 keV	500–1200	47-3543

*Model 44-6 and Model 44-38 Beta Cut-Off ≈ 200 keV (window open)

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