



## February 7, 2023 Product Guide

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**ULTRA Ion-Implanted Detectors**

- Mount must be specified when ordering. See Ordering Information on page 8.
- Only ULTRA-AS in B mount (page 1), BR-SNA (page 5), ENS (page 6), and ENS8 (page 7) detector models are guaranteed compatible with Alpha Suite products (ARIA, DUO, MEGA, ENSEMBLE). All other detector models require an approved special for compatibility and warranted specifications.

Active Area (mm <sup>2</sup> )	Guaranteed Maximum Resolution (keV FWHM)		Minimum Depletion Depth 100 $\mu$ m	Guaranteed Maximum Resolution (keV FWHM)		Minimum Depletion Depth 300 $\mu$ m	Guaranteed Maximum Resolution (keV FWHM)		Minimum Depletion Depth 500 $\mu$ m
	$\alpha$	$\beta$		$\alpha$	$\beta$		$\alpha$	$\beta$	
25	12	6	U-012-025-100	11	5	U-011-025-300	11	5	U-011-025-500
	14	8	U-014-025-100	13	7	U-013-025-300	12	6	U-012-025-500
50	12	6	U-012-050-100	11	5	U-011-050-300	11	5	U-011-050-500
	14	8	U-014-050-100	13	7	U-013-050-300	13	7	U-013-050-500
100	13	7	U-013-100-100	12	6	U-012-100-300	12	6	U-012-100-500
	15	9	U-015-100-100	14	8	U-014-100-300	14	8	U-014-100-500
150	14	9	U-014-150-100	13	8	U-013-150-300	12	7	U-012-150-500
	16	10	U-016-150-100	15	9	U-015-150-300	14	9	U-014-150-500
300	16	11	U-016-300-100	15	10	U-015-300-300	14	9	U-014-300-500
	19	14	U-019-300-100	18	13	U-018-300-300	17	12	U-017-300-500
450	17	12	U-017-450-100	16	11	U-016-450-300	15	10	U-015-450-500
	21	16	U-021-450-100	20	15	U-020-450-300	19	14	U-019-450-500
600	22	17	U-022-600-100	21	16	U-021-600-300	20	15	U-020-600-500
	24	19	U-024-600-100	23	18	U-023-600-300	22	17	U-022-600-500
900	27	22	U-027-900-100	25	20	U-025-900-300	23	18	U-023-900-500
	33	28	U-033-900-100	30	25	U-030-900-300	28	23	U-028-900-500
1200	35	30	U-035-1200-100	30	25	U-030-1200-300	28	23	U-028-1200-500
	42	37	U-042-1200-100	37	32	U-037-1200-300	35	30	U-035-1200-500
2000	50	45	U-050-2000-100	40	35	U-040-2000-300	35	30	U-035-2000-500
	58	53	U-058-2000-100	48	43	U-048-2000-300	43	38	U-043-2000-500
3000	60	55	U-060-3000-100	55	50	U-055-3000-300	50	45	U-050-3000-500
	70	65	U-070-3000-100	65	60	U-065-3000-300	60	55	U-060-3000-500

**ULTRA-AS Ion-Implanted Detectors**

- ~100  $\mu$ m active depth to minimize cosmic background. Recommended for Alpha Suite models.
- Mount must be specified when ordering. See Ordering Information on page 8.

Active Area (mm <sup>2</sup> )	Alpha Resolution (keV FWHM at 5.486 MeV)	Model
300	19	U-019-300-AS
450	20	U-020-450-AS
490	20	U-020-490-AS
600	24	U-024-600-AS
900	29	U-029-900-AS
1200	37	U-037-1200-AS
2000	53	U-053-2000-AS
3000	64	U-064-3000-AS

**A Series Partially Depleted Silicon Surface Barrier Detectors**

- Mount must be specified when ordering. See Ordering Information on page 8.
- Only ULTRA-AS in B mount (page 1), BR-SNA (page 5), ENS (page 6), and ENS8 (page 7) detector models are guaranteed compatible with Alpha Suite products (ARIA, DUO, MEGA, ENSEMBLE). All other detector models require an approved special for compatibility and warranted specifications.

Active Area (mm <sup>2</sup> )	Guaranteed Maximum Resolution (keV)		Minimum Depletion Depth 1000 μm	Guaranteed Maximum Resolution (keV)		Minimum Depletion Depth 1500 μm	Guaranteed Maximum Resolution (keV)		Minimum Depletion Depth 2000 μm
	α	β		Model	α		β	Model	
25	13	6	A-013-025-1000	14	9	A-014-025-1500	16	11	A-016-025-2000
	14	6	A-014-025-1000	16	11	A-016-025-1500			
50	14	7	A-014-050-1000	16	11	A-016-050-1500	17	12	A-017-050-2000
	15	8	A-015-050-1000	18	13	A-018-050-1500			
100	14	7	A-014-100-1000	17	12	A-017-100-1500	18	13	A-018-100-2000
	15	8	A-015-100-1000	19	14	A-019-100-1500			
150	15	9	A-015-150-1000	18	13	A-018-150-1500	19	14	A-019-150-2000
	16	10	A-016-150-1000	20	15	A-020-150-1500			
300	17	13	A-017-300-1000	20	15	A-020-300-1500	22	17	A-022-300-2000
	18	14	A-018-300-1000	23	18	A-023-300-1500			
450	18	13	A-018-450-1000	21	16	A-021-450-1500			
	19	14	A-019-450-1000	26	21	A-026-450-1500			

**B Series Totally Depleted Silicon Surface Barrier Detectors**

- Mount must be specified when ordering. See Ordering Information on page 8.
- Only ULTRA-AS in B mount (page 1), BR-SNA (page 5), ENS (page 6), and ENS8 (page 7) detector models are guaranteed compatible with Alpha Suite products (ARIA, DUO, MEGA, ENSEMBLE). All other detector models require an approved special for compatibility and warranted specifications.

Active Area (mm <sup>2</sup> )	Guaranteed Maximum Resolution (keV)		Depletion Depth 150 μm (Range: 125–175 μm)	Depletion Depth 200 μm (Range: 176–225 μm)	Depletion Depth 250 μm (Range: 226–275 μm)	Depletion Depth 300 μm (Range: 276–350 μm)	Depletion Depth 400 μm (Range: 351–450 μm)
	α	β	Model	Model	Model	Model	Model
50	15	6	B-015-050-150	B-015-050-200	B-015-050-250	B-015-050-300	B-015-050-400
	16	7	B-016-050-150	B-016-050-200	B-016-050-250	B-016-050-300	B-016-050-400
150	17	9	B-017-150-150	B-017-150-200	B-017-150-250	B-017-150-300	B-017-150-400
	18	10	B-018-150-150	B-018-150-200	B-018-150-250	B-018-150-300	B-018-150-400
300	19	12	B-019-300-150	B-019-300-200	B-019-300-250	B-019-300-300	B-019-300-400
	20	15	B-020-300-150	B-020-300-200	B-020-300-250	B-020-300-300	B-020-300-400
450	23	17	B-023-450-150	B-023-450-200	B-023-450-250	B-023-450-300	B-023-450-400
	24	19	B-024-450-150	B-024-450-200	B-024-450-250	B-024-450-300	B-024-450-400

Active Area (mm <sup>2</sup> )	Guaranteed Maximum Resolution (keV)		Depletion Depth 500 μm (Range: 451–550 μm)	Depletion Depth 700 μm (Range: 650–750 μm)	Depletion Depth 1000 μm (Range: 950–1050 μm)
	α	β	Model	Model	Model
50	15	8	B-015-050-500	B-015-050-700	B-015-050-1000
	16	9	B-016-050-500	B-016-050-700	B-016-050-1000
150	17	9	B-017-150-500	B-017-150-700	B-017-150-1000
	18	10	B-018-150-500	B-018-150-700	B-018-150-1000
300	19	13	B-019-300-500	B-019-300-700	B-019-300-1000
	20	14	B-020-300-500	B-020-300-700	B-020-300-1000
450	21	16	B-021-450-500	B-021-450-700	B-021-450-1000
	23	18	B-023-450-500	B-023-450-700	B-023-450-1000

Active Area (mm <sup>2</sup> )	Guaranteed Maximum Resolution (keV)		Depletion Depth 1500 μm (Range: 1450–1550 μm)	Guaranteed Maximum Resolution (keV)	Depletion Depth 2000 μm (Range: 1950–2050 μm)	
	α	β	Model	α	β	Model
50	17	12	B-017-050-1500	18	13	B-018-050-2000
	19	14	B-019-050-1500			
150	19	14	B-019-150-1500	20	15	B-020-150-2000
	21	16	B-021-150-1500			
300	21	16	B-021-300-1500	23	18	B-023-300-2000
450	24	19	B-024-450-1500	26	21	B-026-450-2000

**C Series Annular Partially Depleted Silicon Surface Barrier Detectors**

- Mount must be specified when ordering. See Ordering Information on page 8.
- Only ULTRA-AS in B mount (page 1), BR-SNA (page 5), ENS (page 6), and ENS8 (page 7) detector models are guaranteed compatible with Alpha Suite products (ARIA, DUO, MEGA, ENSEMBLE). All other detector models require an approved special for compatibility and warranted specifications.

Total Area Including 4-mm-diam Hole (mm <sup>2</sup> )	Guaranteed Maximum Resolution (keV)		Minimum Depletion Depth 100 μm	Minimum Depletion Depth 300 μm	Minimum Depletion Depth 500 μm	Guaranteed Maximum Resolution (keV)		Minimum Depletion Depth 1000 μm
	α	β	Model	Model	Model	α	β	Model
50	17	9	C-017-050-100	C-017-050-300	C-017-050-500	18	10	C-018-050-1000
150	19	12	C-019-150-100	C-019-150-300	C-019-150-500	20	12	C-020-150-1000
300	21	14	C-021-300-100	C-021-300-300	C-021-300-500	22	15	C-022-300-1000
450	25	20	C-025-450-100	C-025-450-300	C-025-450-500	25	20	C-025-450-1000

**D Series Planar Totally Depleted Silicon Surface Barrier Detectors**

- Mount must be specified when ordering. See Ordering Information on page 8.
- Only ULTRA-AS in B mount (page 1), BR-SNA (page 5), ENS (page 6), and ENS8 (page 7) detector models are guaranteed compatible with Alpha Suite products (ARIA, DUO, MEGA, ENSEMBLE). All other detector models require an approved special for compatibility and warranted specifications.

Active Area (mm <sup>2</sup> )	Maximum Thickness Variation (μm)	Depletion Depth 15 μm (Range: 7–15 μm)	Depletion Depth 25 μm (Range: 15.1–25 μm)	Depletion Depth 40 μm (Range: 25.1–40 μm)
		Model	Model	Model
10	±0.5	D-020-010-15		
50	±0.5	D-035-050-15	D-035-050-25	D-020-050-40
150	±1.0		D-060-150-25	D-035-150-40
300	±1.0		D-095-300-25	D-055-300-40
450	±3.0		D-100-450-25	D-090-450-40

Active Area (mm <sup>2</sup> )	Maximum Thickness Variation (μm)	Depletion Depth 50 μm (Range: 40.1–65 μm)	Depletion Depth 75 μm (Range: 65.1–85 μm)	Depletion Depth 100 μm (Range: 85.1–110 μm)
		Model	Model	Model
50	±0.5	D-015-050-50	D-015-050-75	D-015-050-100
150	±1.0	D-030-150-50	D-030-150-75	D-025-150-100
300	±1.0	D-045-300-50	D-040-300-75	D-030-300-100
450	±3.0	D-070-450-50	D-060-450-75	D-060-450-100

**F Series Heavy-Ion Partially Depleted Silicon Surface Barrier Detectors**

- Mount must be specified when ordering. See Ordering Information on page 8.
- Only ULTRA-AS in B mount (page 1), BR-SNA (page 5), ENS (page 6), and ENS8 (page 7) detector models are guaranteed compatible with Alpha Suite products (ARIA, DUO, MEGA, ENSEMBLE). All other detector models require an approved special for compatibility and warranted specifications.

Active Area (mm <sup>2</sup> )	Maximum Noise (keV)	≥60 μm Partially Depleted
		Model
100	18	F-018-100-60
300	23	F-023-300-60
400	28	F-028-400-60
600	33	F-033-600-60
900	35	F-035-900-60

**R Series Ruggedized Partially Depleted Silicon Detectors**

- Mount must be specified when ordering. See Ordering Information on page 8.
- Only ULTRA-AS in B mount (page 1), BR-SNA (page 5), ENS (page 6), and ENS8 (page 7) detector models are guaranteed compatible with Alpha Suite products (ARIA, DUO, MEGA, ENSEMBLE). All other detector models require an approved special for compatibility and warranted specifications.

Active Area (mm <sup>2</sup> )	Guaranteed Maximum Resolution (keV)		Minimum Depletion Depth 100 μm	Minimum Depletion Depth 300 μm	Guaranteed Maximum Resolution (keV)		Minimum Depletion Depth 500 μm
	α	β	Model	Model	α	β	Model
50	15	7	R-015-050-100	R-015-050-300	15	7	R-015-050-500
	17	8	R-017-050-100	R-017-050-300	17	8	R-017-050-500
150	16	10	R-016-150-100	R-016-150-300	16	10	R-016-150-500
	19	11	R-019-150-100	R-019-150-300	18	11	R-018-150-500
300	19	13	R-019-300-100	R-019-300-300	19	13	R-019-300-500
	21	15	R-021-300-100	R-021-300-300	21	15	R-021-300-500
450	20	14	R-020-450-100	R-020-450-300	20	14	R-020-450-500
	24	19	R-024-450-100	R-024-450-300	24	18	R-024-450-500
600	25	17	R-025-600-100	R-025-600-300	25	19	R-025-600-500
	33	28	R-033-600-100	R-033-600-300	33	29	R-033-600-500
900	30	25	R-030-900-100	R-030-900-300	30	25	R-030-900-500
	40	35	R-040-900-100	R-040-900-300	53	48	R-053-900-500
2000	50	45	R-050-2000-100	R-050-2000-300	50	45	R-050-2000-500
	60	55	R-060-2000-100	R-060-2000-300	80	75	R-080-2000-500

**Low-Background (“SEE-NO-ALPHA”) R Series for Alpha Spectrometers**

Active Area (mm <sup>2</sup> )	Minimum Depletion Depth 100 μm
	Model
300	TR-SNA-300-100
450	TR-SNA-450-100
600	TR-SNA-600-100

Active Area (mm <sup>2</sup> )	Minimum Depletion Depth 100 μm
	Model
300	BR-SNA-300-100
450	BR-SNA-450-100
600	BR-SNA-600-100
900	BR-SNA-900-100



**Alpha Suite Alpha Spectrometers**

Model	Description
ALPHA-ARIA	Single input NIM spectrometer. Includes one ENS-ST-1, USB Cable and MAESTRO software.
ALPHA-DUO	Dual input benchtop spectrometer. Includes two each ENS-ST-1, one each ENS-ST-KK, one each ENS-CG, USB Cable and MAESTRO software.
ALPHA-MEGA	Single input benchtop spectrometer for up to 4" samples. Includes one each MEGA-ST, one each MEGA-CG, MAESTRO Software and USB cable.
ALPHA-ENSEMBLE-2	2 input benchtop spectrometer (one ALPHA-DUO-M1 module). Includes one each ENS-ST-KK, one each ENS-CG, USB Cable and MAESTRO software.
ALPHA-ENSEMBLE-4	4 input benchtop spectrometer (two ALPHA-DUO-M1 modules). Includes one each ENS-ST-KK, one each ENS-CG, USB Cable and MAESTRO software.
ALPHA-ENSEMBLE-6	6 input benchtop spectrometer (three ALPHA-DUO-M1 modules). Includes one each ENS-ST-KK, one each ENS-CG, USB Cable and MAESTRO software.
ALPHA-ENSEMBLE-8	8 input benchtop spectrometer, (four ALPHA-DUO-M1 modules). Includes one each ENS-ST-KK, one each ENS-CG, USB Cable and MAESTRO software.
ALPHA-ENSEMBLE-1M	Single input benchtop spectrometer (one ALPHA-MEGA-M1 module). Includes one each MEGA-CG, MAESTRO Software and USB cable.
ALPHA-ENSEMBLE-2M	2 input benchtop spectrometer (two ALPHA-MEGA-M1 modules). Includes one each MEGA-CG, MAESTRO Software and USB cable.
ALPHA-ENSEMBLE-3M	3 input benchtop spectrometer (three ALPHA-MEGA-M1 modules). Includes one each MEGA-CG, MAESTRO Software and USB cable.
ALPHA-ENSEMBLE-4M	4 input benchtop spectrometer (four ALPHA-MEGA-M1 modules). Includes one each MEGA-CG, MAESTRO Software and USB cable.
ALPHA-ENSEMBLE-1D-1M	3 input benchtop spectrometer (one ALPHA-DUO-M1 module and one ALPHA-MEGA-M1 module). Includes one each ENS-ST-KK, one each ENS-CG, one each MEGA-CG, MAESTRO Software and USB cable.
ALPHA-ENSEMBLE-1D-2M	4 input benchtop spectrometer (one ALPHA-DUO-M1 module and two ALPHA-MEGA-M1 modules). Includes one each ENS-ST-KK, one each ENS-CG, one each MEGA-CG, MAESTRO Software and USB cable.
ALPHA-ENSEMBLE-1D-3M	5 input benchtop spectrometer (one ALPHA-DUO-M1 module and three ALPHA-MEGA-M1 modules). Includes one each ENS-ST-KK, one each ENS-CG, one each MEGA-CG, MAESTRO Software and USB cable.
ALPHA-ENSEMBLE-2D-1M	5 input benchtop spectrometer (two ALPHA-DUO-M1 modules and one ALPHA-MEGA-M1 module). Includes one each ENS-ST-KK, one each ENS-CG, one each MEGA-CG, MAESTRO Software and USB cable.
ALPHA-ENSEMBLE-2D-2M	6 input benchtop spectrometer (two ALPHA-DUO-M1 modules and two ALPHA-MEGA-M1 modules). Includes one each ENS-ST-KK, one each ENS-CG, one each MEGA-CG, MAESTRO Software and USB cable.
ALPHA-ENSEMBLE-3D-1M	7 input benchtop spectrometer (three ALPHA-DUO-M1 modules and one ALPHA-MEGA-M1 module). Includes one each ENS-ST-KK, one each ENS-CG, one each MEGA-CG, MAESTRO Software and USB cable.

**Expansion Modules for Alpha Ensemble**

ALPHA-DUO-M1	Dual input Alpha Ensemble expansion spectrometer. Includes two each ENS-ST-1.
ALPHA-MEGA-M1	Single input Alpha Ensemble expansion spectrometer. Includes one each MEGA-ST.

**Accessories**

ENS-CG	Chamber Door O-Rings for Aria and Duo Package of 10.
ENS-RACKMOUNT	Installed 19" Rackmount must be ordered with an ALPHA-ENSEMBLE.
ENS-RM-KIT	Rackmount kit for ALPHA-ENSEMBLE not installed.
ENS-ST-KK	Sample Trays for Aria and Duo. (1 each of all four sample trays).
ENS-ST-1	Sample Tray for Aria and Duo, fits 3/4 in. and 1 in. samples.
ENS-ST-2	Sample Tray for Aria and Duo, fits 1/2 in. and 7/8 in. samples.
ENS-ST-3	Sample Tray for Aria and Duo, fits 1-1/4 in. and 1-1/2 in. samples.
ENS-ST-4	Sample Tray for Aria and Duo, fits 1-3/4 in. and 2 in. samples.
MEGA-CG	Chamber Door O-Rings for Mega. Package of 5.
MEGA-ST	Sample Tray for Mega. Fits sample sizes up to 4.18 inches (106 mm). Includes Spring Loaded Filter Retainer.
RCAP-ST	Biased Sample Tray Assembly ALPHA-DUO and ALPHA-ENSEMBLE. Includes batteries and pegs to adjust for various sizes of samples.

**Detectors for Alpha Suite Spectrometers – installed and system tested**

ENS-U300	300 mm <sup>2</sup> low-background ULTRA-AS detector for Alpha Suite Spectrometer
ENS-U450	450 mm <sup>2</sup> low-background ULTRA-AS detector for Alpha Suite Spectrometer
ENS-U490	490 mm <sup>2</sup> low-background ULTRA-AS detector for Alpha Suite Spectrometer
ENS-U600	600 mm <sup>2</sup> low-background ULTRA-AS detector for Alpha Suite Spectrometer
ENS-U900	900 mm <sup>2</sup> low-background ULTRA-AS detector for Alpha Suite Spectrometer
ENS-U1200	1200 mm <sup>2</sup> low-background ULTRA-AS detector for Alpha Suite Spectrometer
ENS-U2000	2000 mm <sup>2</sup> low-background ULTRA-AS detector for Alpha Suite Spectrometer
ENS-U3000	3000 mm <sup>2</sup> low-background ULTRA-AS detector for Alpha Suite Spectrometer
ENS-R300	300 mm <sup>2</sup> low-background Ruggedized detector for Alpha Suite Spectrometer
ENS-R450	450 mm <sup>2</sup> low-background Ruggedized detector for Alpha Suite Spectrometer
ENS-R600	600 mm <sup>2</sup> low-background Ruggedized detector for Alpha Suite Spectrometer
ENS-R900	900 mm <sup>2</sup> low-background Ruggedized detector for Alpha Suite Spectrometer

### Spare Detector Sets for Alpha Suite Spectrometers

- Can only be ordered in conjunction with an ALPHA-ENSEMBLE-8 system including 8 each ENS- model detectors at full price. Customer may then order one set of spare detectors (ENS8 model) per ALPHA-ENSEMBLE-8 system including 8 each ENS- detectors at full price ordered. Spare detectors ordered must be the same size as or smaller than the 8 each ENS- model detectors ordered at full price with the ALPHA-ENSEMBLE-8 system.
- ENS8 model detectors are not installed or system tested.

Model	Description
ENS8U300	Eight 300 mm <sup>2</sup> ULTRA-AS Detectors.
ENS8U450	Eight 450 mm <sup>2</sup> ULTRA-AS Detectors.
ENS8U490	Eight 490 mm <sup>2</sup> ULTRA-AS Detectors.
ENS8U600	Eight 600 mm <sup>2</sup> ULTRA-AS Detectors.
ENS8U900	Eight 900 mm <sup>2</sup> ULTRA-AS Detectors.
ENS8U1200	Eight 1200 mm <sup>2</sup> ULTRA-AS Detectors.

### Portable Pump Station

Model	Description
ALPHA-MINI-PPS	Miniature vacuum pump station with power supply. Includes 10 inch and 3 foot vacuum hose. Recommended for small, single or dual chamber installations only (e.g., a single Alpha-Aria or Alpha-Duo).
ALPHA-MINI-PPS-REPKIT	Overhaul kit for ALPHA-MINI-PPS pump.
ALPHA-PPS-115	115-V Portable Pump Station
ALPHA-PPS-230	230-V Portable Pump Station

### A-576 A-PAD Preamp, Amplifier, Discriminator with Bias Supply

Model	Description
A576	A-PAD Preamp, Amplifier, Discriminator with Bias Supply. <b>NON ROHS.</b>

### Vacuum Chambers

Model	Description
807	Vacuum Chamber
808	Vacuum Chamber
808OPT1	4-ft Vacuum Hose for connection to ALPHA-PPS Pump Station

### 576-VM Vacuum Manifold and Control

Model	Description
576-VM	Vacuum Manifold and Control (115/230 V ac). <b>NON ROHS.</b>

### Ultra-Thin-Window Alpha Sources

- U.S. users must have an NRC and/or Agreement State License with provisions for type and quantity of isotope involved. A copy of this license, authorizing the possession of the source ordered, must accompany an order for these sources.

Model	Description
Am-1C	Calibrated <sup>241</sup> Am Source
Am-1U	Uncalibrated <sup>241</sup> Am Source

### RCAP-2 Ion Recoil Contamination Avoidance Package

Model	Description
RCAP-2-120V	Ion Recoil Contamination Avoidance Package. 120 Volt.
RCAP-2-240V	Ion Recoil Contamination Avoidance Package. 240 Volt.
RCAP-ST	Biased Sample Tray Assembly for RCAP-2 Systems. Includes batteries and pegs to adjust for various sizes of samples.

**Warranty and Ordering Information**

**WARRANTY**

ORTEC warrants that all Charged-Particle Detectors will be delivered free from defects in materials and workmanship and will perform in accordance with performance specifications. ORTEC makes no other warranties express or implied and specifically **NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

ORTEC's exclusive liability for breach of the foregoing warranty is limited to repairing or replacing, at ORTEC's option, defective items returned at Buyer's expense within the following warranty periods:

- A Series.....one year
- B Series.....one year

- C Series .....one year
- D Series (>25 µm thick) .....one year
- D Series (≤25 µm thick) .....three months
- F Series.....three months
- R Series .....one year
- ULTRA/ULTRA CAM/ULTRA-AS.....one year

In the event Charged-Particle Detectors have been subject to mishandling, abuse, radiation damage, or failure to adhere to the use and handling precautions contained in the manual furnished with the detector, no warranty coverage will be afforded.

ORTEC's liability on any claim of any kind, including negligence, for loss or damages arising out of, connected with, or resulting from this

agreement, or from the performance or breach thereof, or from the manufacture, sale delivery, resale, repair, or use of any item or services covered by or furnished under any agreement shall in no case exceed the price allocable to the item or service or part thereof which gives rise to the claim. In the event ORTEC fails to manufacture or deliver items other than standard products that appear in ORTEC's catalog, ORTEC's exclusive liability and Buyer's exclusive remedy shall be release of the Buyer from the obligation to pay the purchase price. **IN NO EVENT SHALL ORTEC BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES.**

**ORDERING INFORMATION**

- ENS- Series detectors (installed and tested when purchasing a new system), ENS8 Series (8-Pack spares with a new system), ULTRA-AS in B mount and BR-SNA models are guaranteed compatible with the Alpha Suite products (DUO, MEGA, ARIA, ENSEMBLE). All other detectors require an approved special for compatibility and warranted specifications.

To order the detector most suitable for your particular needs, select the model number of the detector desired and add the appropriate letter prefix for the mounting desired.

The model numbers for all series of detectors consist of four components: the letter indicates the series; the first three Digits indicate:

1. The maximum room-temperature alpha resolution in keV FWHM for the Series A, B, C, R, ULTRA, ULTRA CAM, and ULTRA-AS.
2. The maximum total system noise width in keV FWHM for the D and F Series detectors.

The next group of digits indicates the minimum active area in mm<sup>2</sup>.

Note that the area indicated for the C Series includes the 4-mm-diameter hole.

The last three digits indicate the depletion depth.

Example: BU-012-100-300 is an ULTRA Partially Depleted detector in a B Mount with a rear Microdot connector with:

- <12 keV alpha resolution
- 100-mm<sup>2</sup> active area
- ≥300-µm depletion depth

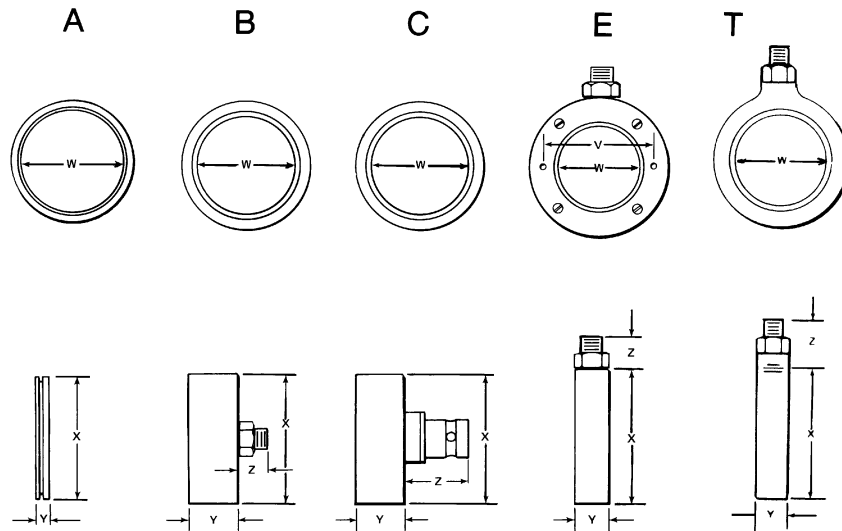
This sample detector would be shipped with a standard rear Microdot connector (B Mount). If a rear BNC connector (C Mount) were desired, the model number should be designated:

CU-012-100-300

**STANDARD MOUNTING INFORMATION**

- Contact the factory for special mounting arrangements.

Detector Series	Specification	Mount
ULTRA and ULTRA-AS	600 mm <sup>2</sup> and below	B, C, or T (closed back)
ULTRA and ULTRA-AS	above 600 mm <sup>2</sup>	B or C
ULTRA CAM		B or C
A		A, B, or C
B		A or T (open back)
C		A or T (open back)
D	≤40 µm depletion depth	A or E
D	>40 µm depletion depth	A, E or T (open back)
F		A, B, or C
R		A, B, C, or T (closed back)



Detector Size (mm <sup>2</sup> )	W (Nominal)	Type A Mount		Type B Rear Microdot			Type C Rear BNC			Type E Demountable Transmission				Type T Transmission Mount		
		X*	Y	X	Y	Z	X	Y	Z	X	Y	Z	V	X	Y	Z
0.25	5.6	15.2	3.7	16.7	12.3	7.1	16.7	12.3	15.9	25.1	7.7	7.0	18.2	19.4	7.6	9.9
050	8.0	15.2	3.7	16.7	12.3	7.1	16.7	12.3	15.9	25.1	7.7	7.0	18.2	19.4	7.6	9.9
100	11.3	22.0	3.7	23.6	12.3	7.1	23.6	12.3	15.9	31.9	7.7	7.0	25.0	26.1	7.6	9.9
150	13.8	22.0	3.7	23.6	12.3	7.1	23.6	12.3	15.9	31.9	7.7	7.0	25.0	26.1	7.6	9.9
200	16.0	27.1	3.7	28.6	12.3	7.1	28.6	12.3	15.9	37.1	7.7	7.0	30.1	31.6	7.6	9.9
300	19.5	27.1	3.7	28.6	12.3	7.1	28.6	12.3	15.9	37.1	7.7	7.0	30.1	31.6	7.6	9.9
400	22.6	30.5	3.7	32.0	12.3	7.1	32.0	12.3	15.9							
450	23.9	30.5	3.7	32.0	12.3	7.1	32.0	12.3	15.9	40.2	7.7	7.0	33.3	34.8	7.6	9.9
600	27.6	34.1	3.7	36.1	12.3	7.1	36.1	12.3	15.9	43.8	7.7	7.0	36.9	38.4	7.6	9.9
900	33.9	43.2	3.7	45.2	12.3	7.1	45.2	12.3	15.9	58.8	7.7	7.0	50.8			
1200	40.0			48.8	12.3	7.1	48.8	12.3	15.9							
1700	47.0			59.0	12.3	7.1	59.0	12.3	15.9							
2000	51.0			65.5	12.3	7.1	65.5	12.3	15.9							
3000	62.0			76.2	12.3	7.1	76.2	12.3	15.9							
Tolerances	±0.5	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3	±0.5	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3

V, W, X, Y, and Z dimensions given in millimeters.

For A and B Series 1500 or 2000 µm deep add 1.5 mm to Y dimension.

**GEM HPGe Coaxial Detector (PopTop or Streamline)**

- For Streamline remove the "P4" from the model number.
- Endcap Diameter must be specified, see Endcap Diameter column [e.g., GEM10-70, GEM35P4-76].
- If dimensional considerations are critical, contact factory.
- Cryostat and dewar or other cooling device are not included with detector.
- Cryostat and dewar or other cooling device are required for operation.
- A cryostat must be ordered with a Streamline detector.
- Supplied with all Aluminum endcap unless otherwise specified.
- Monte Carlo drawing included.

Model	Efficiency (%)	Resolution		Peak-to-Compton Ratio	Peak Shape		Endcap Diameter (mm)
		@ 122 keV (keV)	@ 1.33 MeV (keV)		FW.1M/ FWHM	FW.02M/ FWHM Typical	
GEM10P4	10	0.80	1.75	41:1	1.9	2.6	-70
GEM15P4	15	0.82	1.80	46:1	1.9	2.6	-70
GEM20P4	20	0.82	1.80	52:1	1.9	2.6	-70
GEM25P4	25	0.82	1.85	56:1	1.9	2.6	-70, -76, -83
GEM30P4	30	0.85	1.85	60:1	1.9	2.6	-70, -76, -83
GEM35P4	35	0.85	1.85	62:1	1.9	2.6	-70, -76, -83
GEM40P4	40	0.87	1.85	64:1	1.9	2.6	-76, -83
GEM45P4	45	0.90	1.90	64:1	1.9	2.6	-76, -83
GEM50P4	50	0.90	1.90	66:1	1.9	2.6	-83
GEM55P4	55	1.00	1.90	67:1	1.9	2.8	-83
GEM60P4	60	1.00	1.95	70:1	1.9	3.0	-83, -95
GEM65P4	65	1.00	1.95	73:1	1.9	3.0	-83, -95
GEM70P4	70	1.00	2.0	75:1	2.0	3.0	-95
GEM75P4	75	1.10	2.0	77:1	2.0	3.0	-95
GEM80P4	80	1.10	2.0	77:1	2.0	3.0	-95
GEM90P4	90	1.20	2.0	80:1	2.0	3.0	-95
GEM100P4	100	1.20	2.1	83:1	2.0	3.0	-95
GEM110P4	110	1.30	2.1	85:1	2.0	3.0	-95
GEM120P4	120	1.30	2.1	86:1	2.0	3.1	-108
GEM130P4	130	1.30	2.1	90:1	2.0	3.1	-108
GEM140P4	140	1.30	2.2	90:1	2.0	3.1	-108
GEM150P4	150	1.30	2.3	90:1	2.0	3.1	-108

**GEM Detector Options**

-RB	<b>PopTop Only.</b> Reduced background PopTop capsule with Carbon Fiber Endcap, add "-RB" to the model number [e.g., GEM10P4-70-RB].
-HE	<b>PopTop Only.</b> Harsh Environment PopTop capsule for detectors 76 mm and larger, add "-HE" to the model number [e.g., GEM75P4-95-HE].
-PL	PLUS Ultra-high-count-rate Preamp, add "-PL" to the model number [e.g., GEM10P4-70-PL]. Not compatible with -HJ or -ICS options.
-SMP	SMART-1 detector option for positive bias detector, add "-SMP" to the model number [e.g., GEM75P4-95-SMP]. Not compatible with -HJ or -ICS options.
-LB-C	<b>Streamline Only.</b> Low-Background Detector with Carbon Fiber Endcap, add "-LB-C" to the model number [e.g., GEM65-83-LB-C]. Requires selection of a Low-Background LB cryostat.
-XLB-C	<b>Streamline Only.</b> Extra-Low-Background Detector with Carbon Fiber Endcap, add "-XLB-C" to the model number [e.g., GEM90-95-XLB-C]. Requires selection of a Low-Background XLB cryostat.
-HJ	<b>Streamline Only.</b> Remote preamplifier and high voltage filter for use with HJ type cryostat, add "-HJ" to the model number [e.g., GEM40-76-HJ]. Requires selection of HJ cryostat. Not compatible with -PL or -SMP options.
-ICS-E	<b>Streamline Only.</b> Integrated Cryocooling System with External Preamp. Cryostat sealed with a cryocooler and immune to thermal short cycling, add "-ICS-E" to the model number [e.g., GEM10-70-ICS-E]. Requires selection of ICS-E cryostat.
-ICS	<b>Streamline Only.</b> Integrated Cryocooling System with Internal Preamp. Cryostat sealed with a cryocooler and immune to thermal short cycling, add "-ICS" to the model number [e.g., GEM10-70-ICS]. Requires selection of ICS cryostat. Not compatible with -PL or -SMP options.
-ICS-LB	<b>Streamline Only.</b> Integrated Cryocooling Low-Background System with Internal Preamp, High Purity Al Endcap and Cu Mount, add "-ICS-LB" to the model number [e.g., GEM90-95-ICS-LB]. Requires selection of ICS cryostat. Not compatible with -PL or -SMP options.

**GEM PopTop Cryostats and Dewars**

Model	Description
CFG-MG4-1.2G	Gamma Gage Cryostat with 1.2-liter Dewar, Pistol Grip handle and mounting holes to fit the M-1-T1 Tripod (for 83 mm or smaller endcaps)
CFG-PD4-7.5	Down-looking Cryostat with 7.5-liter Dewar
CFG-PD4-13	Down-looking Cryostat with 13-liter Dewar
CFG-PD4-30	Down-looking Cryostat with 30-liter Dewar
CFG-PG4-1.2	Gamma Gage Cryostat with 1.2-liter Dewar (for 83 mm or smaller endcaps) (not compatible with -HE option)
CFG-PG4-3	Gamma Gage Cryostat with 3-liter Dewar
CFG-PG4-5	Gamma Gage Cryostat with 5-liter Dewar
CFG-PH4	Horizontal Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-PMOD4-3	Gamma Gage Cryostat with 3-liter Multi-Orientation Dewar
CFG-PMOD4-7	Gamma Gage Cryostat with 7-liter Multi-Orientation Dewar
CFG-PS4-7.5	Side-Looking Cryostat with 7.5-liter Dewar
CFG-PS4-13	Side-Looking Cryostat with 13-liter Dewar
CFG-PS4-30	Side-Looking Cryostat with 30-liter Dewar
CFG-PS4-MOBIUS-B	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar
CFG-PS4-MOBIUS-B-DET	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar for purchase in combination with any PopTop detector.
CFG-PSHP4	Down-Looking Shallow-Hole Probe with 0.7-liter Dewar
CFG-PV4	Vertical Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-ICS-P4	Integrated Cryocooling System. Includes 2 year warranty on cryocooler, internal controller and active noise cancellation. (FWHM resolution below 100 keV may degrade by up to 10%.)
MOBIUS-PT	Möbius Recycler 27-liter Dewar
MOBIUS-PT-DET	Möbius Recycler 27-liter Dewar for purchase in combination with detector and vertical or horizontal dipstick cryostat.
DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
DWR-S/F	Storage/Fill Dewar for CFG-PG4-x

**GEM Streamline Cryostats**

- May only be purchased with a detector.
- Append matching Detector Endcap Size designation to cryostat model: -70, -76, -83, -95, -108 [e.g., CFG-SJ-95 for GEM75-95, or CFG-SL-XLB-76 for GEM25-76-XLB-C].
- Dewar required. Select dewar from GEM Streamline Dewars.
- Horizontal and Vertical Cryostats include CFG-ADAPTOR to increase cryostat diameter from 1.25 inch to 1.5 inch for use with DWR-30 and DWR-30-OP.

Model	Description
CFG-GG	Gamma Gage Cryostat
CFG-HJ	J-type Cryostat with Remote Preamp. (For -HJ option only.)
CFG-SD	Down-Looking Cryostat
CFG-SH	Horizontal Cryostat (Dipstick type)
CFG-SJ	J-type Cryostat
CFG-SL	Side-Looking Cryostat
CFG-SV	Vertical Cryostat (Dipstick type)

**LOW-BACKGROUND**

CFG-GG-LB	Low-Background Gamma Gage Cryostat
CFG-HJ-LB	Low-Background J-type Cryostat with Remote Preamp. (For -HJ option only.)
CFG-SD-LB	Low-Background Down-Looking Cryostat
CFG-SH-LB	Low-Background Horizontal Cryostat (Dipstick type)
CFG-SJ-LB	Low-Background J-type Cryostat
CFG-SL-LB	Low-Background Side-Looking Cryostat
CFG-SV-LB	Low-Background Vertical Cryostat (Dipstick type)
CFG-SD-XLB	Extra-Low-Background Down-Looking Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SH-XLB	Extra-Low-Background Horizontal Cryostat (Dipstick type). Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SJ-XLB	Extra-Low-Background J-type Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SL-XLB	Extra-Low-Background Side-Looking Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SV-XLB	Extra-Low-Background Vertical Cryostat (Dipstick type). Includes ~1" thick lead shield between crystal mount and external preamp.

**GEM Streamline Dewars**

Model	Choose	Description
CFG-GG	DWR-1.2G	1.2-liter All-Orientation Dewar
	DWR-3.0G	3.0-liter All-Orientation Dewar
	DWR-5.0G	5.0-liter All-Orientation Dewar
	DWR-MOD-3L	3-liter Multi-Orientation Dewar
	DWR-MOD-7L	7-liter Multi-Orientation Dewar
	DWR-0.7-SHP-G	0.7-liter Shallow-Hole Probe Dewar
	DWR-S/F	Storage/Fill Dewar for DWR-xG
CFG-HJ, SJ, SL	DWR-7.5B	7.5-liter Side-Looking Dewar
	DWR-13B	13-liter Side-Looking Dewar
	DWR-30B	30-liter Side-Looking Dewar
	MOBIUS-B	Möbius Recycler 27-liter Side-Looking Dewar
CFG-SD	DWR-7.5D	7.5-liter Down-Looking Dewar
	DWR-13D	13-liter Down-Looking Dewar
	DWR-30D	30-liter Down-Looking Dewar
CFG-SV, SH	DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
	DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
	MOBIUS-ST	Möbius Recycler 27-liter Dewar for purchase stand alone
	MOBIUS-ST-DET	Möbius Recycler 27-liter Dewar for purchase in combination with Detector

**GEM Streamline ICS Cryostat**

- May only be purchased with a detector.
- Append matching Detector Endcap Size designation to Cooling Rod Length model: -70, -76, -83, -95, -108 [e.g., CFG-ICS, ICS-LL102-70 for GEM25-ICS].
- FWHM resolution below 100 keV may degrade by up to 10%.

Model	Description
CFG-ICS-E	Integrated Cryocooling System with External Preamp. <b>Cooling Rod Length must be specified, see below.</b> <b>Cooling Rod Length. Add as separate line item ICS-LLExxx</b> where xxx = one of the following lengths: 025, 031, 037, 050, 063, 075, 088, 101, 114, 126, 139, 152, 164, 177, 190, 202, 215, 228 and <b>append matching Detector Endcap Size</b> [e.g., ICS-LLE063-70].
CFG-ICS	Integrated Cryocooling System with Internal Preamp. <b>Cooling Rod Length must be specified, see below.</b> <b>Cooling Rod Length. Add as separate line item ICS-LLxxx</b> where xxx = one of the following lengths: 051, 064, 076, 089, 102, 114, 127, 140, 152, 165, 178, 191, 203, 216, 229, 241, 254, 267, 279, 292, or 305 and <b>append matching Detector Endcap Size</b> [e.g., ICS-LL102-70].

**PROFILE Series GEM Detectors (PopTop or Streamline)**

- For Streamline remove the "P4" from the model number.
- If dimensional considerations are critical, contact factory.
- Cryostat and dewar or other cooling device are not included with detector.
- Cryostat and dewar or other cooling device are required for operation.
- A cryostat must be ordered with a Streamline detector.
- GEM-M????P4 is an M-series Profile detector optimized for use with Marinelli Beakers: Choose the largest diameter which will fit within the Marinelli well.
- GEM-F????P4 is an F-series Profile detector optimized for "close geometry" samples such as filters, Petri dishes, and bottles. If possible, choose a crystal diameter >20% larger than your sample.
- Monte Carlo drawing included with GEM-M and GEM-F detectors.

Model	Crystal Dimensions		Energy Resolution (FWHM)				Peak Shape			Nominal Relative Efficiency (%)	Endcap Diameter (mm)	
	Actual Diameter +0/-2 mm	Actual Length Min	@ 5.9 keV Warranted (eV) <sup>§</sup>	@ 14.4 keV Warranted (eV)	@ 46 keV Typical (eV)**	@ 122 keV Warranted (eV)	@ 1.33 MeV Warranted (keV)	FW.1M/ FWHM Typical	FW.02M/ FWHM Typical			P:C Warranted
GEM-F5930P4	59	30				675	1.8	1.90	2.65	40	20	70
GEM-F7040P4	70	40				750	1.9	1.90	2.65	50	40	83
GEM-F8250P4	82	50				850	2.1	2.00	3.00	62	60	95
GEM-M5060P4	50	60				875	1.8	1.90	2.55	60	20	70
GEM-M5970P4	59	70				900	1.8	1.90	2.65	62	38	70
GEM-M7080P4	70	80				950	1.9	2.00	3.00	75	66	83
GEM-M8295P4	82	95				1300	2.1	2.00	3.10	85	115	95
GEM-M94100P4	94	100				1300	2.3	2.00	3.10	90	175	108
GEM-S5020P4	50	20	350	400	450	650	1.8	1.90	2.55	35	7	70
GEM-S5825P4	58	25	400	450	500	650	1.8	1.90	2.65	35	15	70
GEM-S7025P4	70	25	450	550	575	650	1.9	1.95	2.75	40	20	83
GEM-S7030P4	70	30	450	550	600	700	1.9	2.00	2.90	40	28	83
GEM-S8530P4	85	30	500	575	625	700	1.9	2.00	2.90	55	50	108
GEM-S9430P4	94	30	500	575	650	700	1.9	2.00	2.90	65	65	108
GEM-S10530P4	105	30	550	600	650	700	2.0	2.00	2.90	65	80	121 <sup>†</sup>
GEM-S10535P4	105	35	550	600	650	700	2.0	2.00	2.90	65	90	121 <sup>†</sup>
GEM-SP5020P4	50	20	300	350		585	1.8	1.90	2.55	35	7	70
GEM-SP5825P4	58	25	340	375		585	1.8	1.90	2.65	35	15	70
GEM-SP7025P4	70	25	380	400		585	1.8	1.95	2.75	40	20	83
GEM-SP8530P4	85	30	400	425		630	1.9	2.00	2.90	55	50	108
GEM-SP9430P4	94	30	425	450		630	1.9	2.00	2.90	65	65	108
GEM-SP10530P4	105	30	450	475		630	2.0	2.00	2.90	65	80	121 <sup>†</sup>

Model	Crystal Dimensions		Energy Resolution (FWHM)				Peak Shape			Nominal Relative Efficiency (%)	Endcap Diameter (mm)
	Actual Diameter +2/-2 mm	Actual Length Min	@ 5.9 keV Warranted (eV) <sup>§</sup>	@ 14.4 keV Warranted (eV)	@ 122 keV Warranted (eV)	@ 1.33 MeV Warranted (keV)	FW.1M/ FWHM Typical	FW.02M/ FWHM Typical	P:C Warranted		
GEM-C10P4	50	25	600	700	800	1.8	1.9	2.55	41	10	70
GEM-C15P4	50	44	635	735	820	1.8	1.9	2.55	46	15	70
GEM-C20P4	50	60	650	750	820	1.8	1.9	2.55	52	20	70
GEM-C25P4	57	50	690	775	850	1.8	1.9	2.60	56	25	70
GEM-C30P4	57	62	715	775	850	1.8	1.9	2.60	60	30	70
GEM-C35P4	57	75	730	800	850	1.8	1.9	2.60	62	35	70
GEM-C40P4	64*	58	760	800	870	1.8	1.9	2.60	64	40	76
GEM-C45P4	64*	68	800	825	900	1.8	1.9	2.60	64	45	76
GEM-C50P4	68	62	800	825	900	1.9	1.9	2.60	66	50	83
GEM-C55P4	68	70	830	925	1000	1.9	1.9	2.60	67	55	83
GEM-C60P4	68	77	830	925	1000	1.9	1.9	2.80	70	60	83
GEM-C65P4	68	86	830	925	1000	1.9	1.9	3.00	73	65	83
GEM-C70P4	70*	85	900	950	1000	2.0	1.9	3.00	75	70	83
GEM-C75P4	80	56	900	950	1000	2.0	1.9	3.00	73	75	95
GEM-C80P4	80	61	950	950	1000	2.0	1.9	3.00	73	80	95
GEM-C90P4	80	70	950	1025	1100	2.0	1.9	3.00	80	90	95
GEM-C100P4	80	82	1000	1050	1100	2.1	1.9	3.00	83	100	95
GEM-C110P4	80	91	1050	1075	1100	2.1	1.9	3.00	85	110	95
GEM-C120P4	82*	98	1050	1075	1100	2.1	1.9	3.00	86	120	95
GEM-C130P4	92	67	1100	1160	1200	2.1	2.0	3.10	83	130	108
GEM-C140P4	92	74	1100	1160	1200	2.2	2.0	3.10	83	140	108
GEM-C150P4	92	81	1100	1250	1300	2.3	2.0	3.10	90	150	108
GEM-C175P4	94*	100	1100	1250	1300	2.3	2.0	3.10	90	175	108

§) 5.9 specification only applies with -RB, -B, LB-C, and XLB-C options.

†) Contact Factory for low background availability with 121 mm endcap size.

\*) Diameter tolerance +0/-2 mm.

\*\*\*) Typical performance. Not measured.



**PROFILE Detector Options**

Model	Description
-RB	<b>PopTop Only.</b> Reduced background PopTop capsule with Carbon Fiber Endcap, add "-RB" to the model number [e.g., GEM-M5970P4-RB].
-HE	<b>PopTop Only.</b> Harsh Environment PopTop capsule for detectors 76 mm and larger, add -HE to the model number [e.g., GEM-M94100P4-HE].
-B	<b>GEM-S, GEM-SP and GEM-C Only.</b> Be Window, add "-B" to the model number [e.g., GEM-S7025-B]. Not compatible with ICS-E option.
-PL	<b>GEM-F, GEM-M and GEM-C Only.</b> PLUS Ultra-high-count-rate Preamplifier, add "-PL" to the model number [e.g., GEM-M5970P4-PL]. Not compatible with -HJ option.
-SMP	SMART-1 detector option for positive bias detector, add SMP to model number [e.g., GEM-F7040P4-SMP]. Not compatible with -HJ option.
-LB-C	<b>Streamline Only.</b> Low-Background Detector with Carbon Fiber Endcap, add "-LB-C" to the model number [e.g., GEM-M94100-LB-C]. Requires selection of a Low-Background LB cryostat. Contact Factory for availability with 121 mm endcap size.
-XLB-C	<b>Streamline Only.</b> Extra-Low-Background Detector with Carbon Fiber Endcap, add "-XLB-C" to the model number [e.g., GEM-S8530-XLB-C]. Requires selection of a Low-Background XLB cryostat. Contact Factory for availability with 121 mm endcap size.
-HJ	<b>Streamline Only.</b> Remote preamplifier and high voltage filter for use with HJ type cryostat, add "-HJ" to the model number [e.g., GEM-M5970-HJ]. Requires selection of HJ cryostat. Not compatible with -PL or -SMP options.
-ICS-E	<b>Streamline Only.</b> Integrated Cryocooling System with External Preamp. Cryostat sealed with a cryocooler and immune to thermal short cycling, add "-ICS-E" to the model number [e.g., GEM-C5060-ICS-E]. Requires selection of ICS-E cryostat. Not compatible with -B option. Contact Factory for availability with GEM-SP.

**PROFILE PopTop Cryostats and Dewars**

Model	Description
CFG-PD4-7.5	Down-looking Cryostat with 7.5-liter Dewar
CFG-PD4-13	Down-looking Cryostat with 13-liter Dewar
CFG-PD4-30	Down-looking Cryostat with 30-liter Dewar
CFG-PG4-1.2	Gamma Gage Cryostat with 1.2-liter Dewar (for 83 mm or smaller endcaps) (not compatible with -HE option)
CFG-PG4-3	Gamma Gage Cryostat with 3-liter Dewar
CFG-PG4-5	Gamma Gage Cryostat with 5-liter Dewar
CFG-PH4	Horizontal Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-PMOD4-3	Gamma Gage Cryostat with 3-liter Multi-Orientation Dewar
CFG-PMOD4-7	Gamma Gage Cryostat with 7-liter Multi-Orientation Dewar
CFG-PS4-7.5	Side-Looking Cryostat with 7.5-liter Dewar
CFG-PS4-13	Side-Looking Cryostat with 13-liter Dewar
CFG-PS4-30	Side-Looking Cryostat with 30-liter Dewar
CFG-PS4-MOBIUS-B	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar
CFG-PS4-MOBIUS-B-DET	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar for purchase in combination with any PopTop detector.
CFG-PSHP4	Down-Looking Shallow-Hole Probe with 0.7-liter Dewar
CFG-PV4	Vertical Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-ICS-P4	Integrated Cryocooling System. Includes 2 year warranty on cryocooler, internal controller and active noise cancellation. (FWHM resolution below 100 keV may degrade by up to 10%.)
MOBIUS-PT	Möbius Recycler 27-liter Dewar
MOBIUS-PT-DET	Möbius Recycler 27-liter Dewar for purchase in combination with detector and vertical or horizontal dipstick cryostat.
DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
DWR-S/F	Storage/Fill Dewar for CFG-PG4-x

**PROFILE Streamline Cryostats**

- May only be purchased with a detector.
- Append matching Detector Endcap Size designation to cryostat model: -70, -83, -95 -108, -121 [e.g., CFG-SJ-95 for GEM-F8250, or CFG-SL-XLB-83 for GEM-S7025-XLB-C]
- Dewar required. Select dewar from Profile Streamline Dewars.
- Horizontal and Vertical Cryostats include CFG-ADAPTOR to increase cryostat diameter from 1.25 inch to 1.5 inch for use with DWR-30 and DWR-30-OP.

Model	Description
CFG-GG	Gamma Gage Cryostat
CFG-HJ	J-type Cryostat with Remote Preamp. (For -HJ option only.)
CFG-SD	Down-Looking Cryostat
CFG-SH	Horizontal Cryostat (Dipstick type)
CFG-SJ	J-type Cryostat
CFG-SL	Side-Looking Cryostat
CFG-SV	Vertical Cryostat (Dipstick type)

**LOW-BACKGROUND**

CFG-GG-LB	Low-Background Gamma Gage Cryostat
CFG-HJ-LB	Low-Background J-type Cryostat with Remote Preamp. (For -HJ option only.)
CFG-SD-LB	Low-Background Down-Looking Cryostat
CFG-SH-LB	Low-Background Horizontal Cryostat (Dipstick type)
CFG-SJ-LB	Low-Background J-type Cryostat
CFG-SL-LB	Low-Background Side-Looking Cryostat
CFG-SV-LB	Low-Background Vertical Cryostat (Dipstick type)
CFG-SD-XLB	Extra-Low-Background Down-Looking Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SH-XLB	Extra-Low-Background Horizontal Cryostat (Dipstick type). Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SJ-XLB	Extra-Low-Background J-type Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SL-XLB	Extra-Low-Background Side-Looking Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SV-XLB	Extra-Low-Background Vertical Cryostat (Dipstick type). Includes ~1" thick lead shield between crystal mount and external preamp.

**PROFILE Streamline Dewars**

Model	Choose	Description
CFG-GG	DWR-1.2G	1.2-liter All-Orientation Dewar
	DWR-3.0G	3.0-liter All-Orientation Dewar
	DWR-5.0G	5.0-liter All-Orientation Dewar
	DWR-MOD-3L	3-liter Multi-Orientation Dewar
	DWR-MOD-7L	7-liter Multi-Orientation Dewar
	DWR-0.7-SHP-G	0.7-liter Shallow-Hole Probe Dewar
	DWR-S/F	Storage/Fill Dewar for DWR-xG
CFG-HJ, SJ, SL	DWR-7.5B	7.5-liter Side-Looking Dewar
	DWR-13B	13-liter Side-Looking Dewar
	DWR-30B	30-liter Side-Looking Dewar
	MOBIUS-B	Möbius Recycler 27-liter Side-Looking Dewar
CFG-SD	DWR-7.5D	7.5-liter Down-Looking Dewar
	DWR-13D	13-liter Down-Looking Dewar
	DWR-30D	30-liter Down-Looking Dewar
CFG-SV, SH	DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
	DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
	MOBIUS-ST	Möbius Recycler 27-liter Dewar for purchase stand alone
	MOBIUS-ST-DET	Möbius Recycler 27-liter Dewar for purchase in combination with Detector

**PROFILE Streamline ICS Cryostat**

- May only be purchased with a detector.
- Append matching Detector Endcap Size designation to Cooling Rod Length model: -70, -83, -95, -108, -121 [e.g., CFG-ICS-E, ICS-LLE101-83 for GEMS7025-ICS-E].
- Contact Factory for availability with GEM-SP.
- FWHM resolution below 100 keV may degrade by up to 10%.

Model	Description
CFG-ICS-E	Integrated Cryocooling System with External Preamp. <b>Cooling Rod Length must be specified, see below.</b> <b>Cooling Rod Length. Add as separate line item ICS-LLExxx</b> where xxx = one of the following lengths: 025, 031, 037, 050, 063, 075, 088, 101, 114, 126, 139, 152, 164, 177, 190, 202, 215, 228 and <b>append matching Detector Endcap Size</b> [e.g., ICS-LLE063-70].

**GAMMA-X HPGe Coaxial Detector (PopTop or Streamline)**

- For Streamline remove the "P4" from the model number.
- Endcap Diameter must be specified, see Endcap Diameter column[e.g., GMX10P4-70, GMX35P4-76].
- If dimensional considerations are critical, contact factory.
- Cryostat and dewar or other cooling device are not included with detector.
- Cryostat and dewar or other cooling device are required for operation.
- A cryostat must be ordered with a Streamline detector.
- Supplied with Aluminum endcap with Be window unless otherwise specified.
- Monte Carlo drawing included.

Model	Relative Photopeak Efficiency (%)	Resolution		Peak-to-Compton Ratio	Peak Shape		Endcap Diameter (mm)	Be Window Thickness (mm)
		@ 5.9 keV (eV FWHM)	@ 1.33 MeV (keV FWHM)		FW.1M/ FWHM	FW.02M/ FWHM Typical		
GMX10P4	10	600	1.80	40:1	1.9	2.6	-70	0.51
GMX15P4	15	635	1.85	44:1	1.9	2.6	-70	0.51
GMX20P4	20	650	1.90	48:1	1.9	2.8	-70	0.51
GMX25P4	25	690	1.90	48:1	1.9	2.8	-70, -76, -83	0.51
GMX30P4	30	715	1.90	52:1	1.9	2.8	-70, -76, -83	0.51
GMX35P4	35	730	1.95	55:1	2.0	3.0	-70, -76, -83	0.51
GMX40P4	40	760	2.0	59:1	2.0	3.0	-76, -83	0.51
GMX45P4	45	800	2.1	60:1	2.0	3.0	-76, -83	0.51
GMX50P4	50	800	2.2	58:1	2.0	3.0	-83	0.51
		(keV FWHM)						
GMX60P4	60	1.10	2.3	56:1	2.0	3.0	-83, -95	0.51, 0.76
GMX70P4	70	1.10	2.3	60:1	2.0	3.0	-95	0.76
GMX80P4	80	1.10	2.3	63:1	2.0	3.0	-95	0.76
GMX90P4	90	1.20	2.4	64:1	2.1	3.1	-95	0.76
GMX100P4	100	1.20	2.5	64:1	2.2	3.2	-95	0.76

**GMX Detector Options**

- Consult ICS Detector Model Status Update for available ICS configurations.

-RB	<b>PopTop Only.</b> Reduced background PopTop capsule with Carbon Fiber Endcap, add "-RB" to the model number [e.g., GMX10P4-70-RB]. This option deletes the 5.9-keV resolution specification.
-HE	<b>PopTop Only.</b> Harsh Environment PopTop capsule for detectors 76 mm and larger, add "-HE" to the model number [e.g., GMX70P4-95-HE]. This option deletes the 5.9-keV resolution specification.
-PL	PLUS Ultra-high-count-rate Preamplifier, add "-PL" to the model number [e.g., GMX90P4-95-PL]. Not compatible with -HJ option.
-SMN	SMART-1 option for negative bias detector, add "-SMN" to the model number [e.g., GMX70P4-95-SMN]. Not compatible with -HJ option.
-A	Aluminum endcap (no Be) at no extra charge, add "-A" to the model number [e.g., GMX90P4-95-A]. This option deletes the 5.9-keV resolution specification.
-CW	Carbon Fiber Window (0.9 mm thick) at no extra charge, add "-CW" to the model number [e.g., GMX90P4-95-CW]. This option deletes the 5.9-keV resolution specification.
-LB-C	<b>Streamline Only.</b> Low-Background Detector with Carbon Fiber Endcap, add "-LB-C" to the model number [e.g., GMX60-83-LB-C]. Requires selection of a Low-Background LB cryostat. This option deletes the 5.9-keV resolution specification.
-XLB-C	<b>Streamline Only.</b> Extra-Low-Background Detector with Carbon Fiber Endcap, add "-XLB-C" to the model number [e.g., GMX90-95-XLB-C]. Requires selection of a Low-Background XLB cryostat. This option deletes the 5.9-keV resolution specification.
-HJ	<b>Streamline Only.</b> Remote preamplifier and high voltage filter for use with HJ type cryostat, add "-HJ" to the model number[e.g., GMX40-76-HJ]. Requires selection of HJ cryostat. Not compatible with -PL or -SMN options.
-ICS-E	<b>Streamline Only.</b> Integrated Cryocooling System with External Preamp. Cryostat sealed with a cryocooler and immune to thermal short cycling, add "-ICS-E" to the model number [e.g., GMX10-70-ICS-E]. Requires selection of ICS-E cryostat.

**GMX PopTop Cryostats and Dewars**

Model	Description
CFG-MG4-1.2G	Gamma Gage Cryostat with 1.2-liter Dewar, Pistol Grip handle and mounting holes to fit the M-1-T1 Tripod (for 83 mm or smaller endcaps)
CFG-PD4-7.5	Down-looking Cryostat with 7.5-liter Dewar
CFG-PD4-13	Down-looking Cryostat with 13-liter Dewar
CFG-PD4-30	Down-looking Cryostat with 30-liter Dewar
CFG-PG4-1.2	Gamma Gage Cryostat with 1.2-liter Dewar (for 83 mm or smaller endcaps) (not compatible with -HE option)
CFG-PG4-3	Gamma Gage Cryostat with 3-liter Dewar
CFG-PG4-5	Gamma Gage Cryostat with 5-liter Dewar
CFG-PH4	Horizontal Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-PMOD4-3	Gamma Gage Cryostat with 3-liter Multi-Orientation Dewar
CFG-PMOD4-7	Gamma Gage Cryostat with 7-liter Multi-Orientation Dewar
CFG-PS4-7.5	Side-Looking Cryostat with 7.5-liter Dewar
CFG-PS4-13	Side-Looking Cryostat with 13-liter Dewar
CFG-PS4-30	Side-Looking Cryostat with 30-liter Dewar
CFG-PS4-MOBIUS-B	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar
CFG-PS4-MOBIUS-B-DET	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar for purchase in combination with any PopTop detector.
CFG-PSHP4	Down-Looking Shallow-Hole Probe with 0.7-liter Dewar
CFG-PV4	Vertical Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-ICS-P4	Integrated Cryocooling System. Includes 2 year warranty on cryocooler, internal controller and active noise cancellation. (FWHM resolution below 100 keV may degrade by up to 10%.)
MOBIUS-PT	Möbius Recycler 27-liter Dewar
MOBIUS-PT-DET	Möbius Recycler 27-liter Dewar for purchase in combination with detector and vertical or horizontal dipstick cryostat.
DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
DWR-S/F	Storage/Fill Dewar for CFG-PG4-x

**GAMMA-X Streamline Cryostats**

- May only be purchased with a detector.
- Append matching Detector Endcap Size designation to cryostat model: -70, -76, -83, -95 [e.g., CFG-SJ-95 for GMX70-95 or CFG-SL-XLB-83 for GMX25-83-XLB-B]
- Dewar required. Select dewar from GAMMA-X Streamline Dewars.
- Horizontal and Vertical Cryostats include CFG-ADAPTOR to increase cryostat diameter from 1.25 inch to 1.5 inch for use with DWR-30 and DWR-30-OP.

Model	Description
CFG-GG	Gamma Gage Cryostat
CFG-HJ	J-type Cryostat with Remote Preamp. (For -HJ option only.)
CFG-SD	Down-Looking Cryostat
CFG-SH	Horizontal Cryostat (Dipstick type)
CFG-N-SH	Horizontal Cryostat with vacuum valve (Dipstick type). Requires model VV02 and model 496-1 (110 V/60 Hz) or model 496-2 (220 V/50 Hz).
CFG-SJ	J-type Cryostat
CFG-SL	Side-Looking Cryostat
CFG-SV	Vertical Cryostat (Dipstick type)

**LOW-BACKGROUND**

CFG-GG-LB	Low-Background Gamma Gage Cryostat
CFG-HJ-LB	Low-Background J-type Cryostat with Remote Preamp. (For -HJ option only.)
CFG-SD-LB	Low-Background Down-Looking Cryostat
CFG-SH-LB	Low-Background Horizontal Cryostat (Dipstick type)
CFG-SJ-LB	Low-Background J-type Cryostat
CFG-SL-LB	Low-Background Side-Looking Cryostat
CFG-SV-LB	Low-Background Vertical Cryostat (Dipstick type)
CFG-SD-XLB	Extra-Low-Background Down-Looking Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SH-XLB	Extra-Low-Background Horizontal Cryostat (Dipstick type). Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SJ-XLB	Extra-Low-Background J-type Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SL-XLB	Extra-Low-Background Side-Looking Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SV-XLB	Extra-Low-Background Vertical Cryostat (Dipstick type). Includes ~1" thick lead shield between crystal mount and external preamp.

**GMX Streamline Dewars**

Model	Choose	Description
CFG-GG	DWR-1.2G	1.2-liter All-Orientation Dewar
	DWR-3.0G	3.0-liter All-Orientation Dewar
	DWR-5.0G	5.0-liter All-Orientation Dewar
	DWR-MOD-3L	3-liter Multi-Orientation Dewar
	DWR-MOD-7L	7-liter Multi-Orientation Dewar
	DWR-0.7-SHP-G	0.7-liter Shallow-Hole Probe Dewar
	DWR-S/F	Storage/Fill Dewar for DWR-xG
CFG-HJ, SJ, SL	DWR-7.5B	7.5-liter Side-Looking Dewar
	DWR-13B	13-liter Side-Looking Dewar
	DWR-30B	30-liter Side-Looking Dewar
	MOBIUS-B	Möbius Recycler 27-liter Side-Looking Dewar
CFG-SD	DWR-7.5D	7.5-liter Down-Looking Dewar
	DWR-13D	13-liter Down-Looking Dewar
	DWR-30D	30-liter Down-Looking Dewar
CFG-SV, SH	DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
	DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
	MOBIUS-ST	Möbius Recycler 27-liter Dewar for purchase stand alone
	MOBIUS-ST-DET	Möbius Recycler 27-liter Dewar for purchase in combination with Detector

**GAMMA-X Streamline ICS Cryostat**

- May only be purchased with a detector.
- Append matching Detector Endcap Size designation to Cooling Rod Length model: -70, -76, -83, -95 [e.g., CFG-ICS-E, ICS-LLE101-83 for GMX25-83-ICS-E].
- FWHM resolution below 100 keV may degrade by up to 10%.

Model	Description
CFG-ICS-E	Integrated Cryocooling System with External Preamp. <b>Cooling Rod Length must be specified, see below.</b> <b>Cooling Rod Length. Add as separate line item ICS-LLExxx</b> where xxx = one of the following lengths: 025, 031, 037, 050, 063, 075, 088, 101, 114, 126, 139, 152, 164, 177, 190, 202, 215, 228 and <b>append matching Detector Endcap Size</b> [e.g., ICS-LLE063-70].

**GWL Series HPGe Well Detector (Streamline)**

- If dimensional considerations are critical, contact factory.
- Cryostat and dewar are not included with detector.
- Cryostat and dewar are required for operation.
- A cryostat must be ordered with a Streamline detector.

Model	Volume Nominal (cc)	Well Tube		Energy Resolution FWHM		Endcap Diameter (mm)
		Diameter (mm)	Depth (mm)	@ 1.33 MeV (keV)	@ 122 keV (keV)	
GWL-90-10	90	10	40	2.10	1.2	70
GWL-90-15	90	15.5	40	2.30	1.4	70
GWL-110-10	110	10	40	2.10	1.2	70
GWL-110-15	110	15.5	40	2.30	1.4	70
GWL-120-10	120	10	40	2.10	1.2	70
GWL-120-15	120	15.5	40	2.30	1.4	70
GWL-130-10	130	10	40	2.10	1.2	70
GWL-130-15	130	15.5	40	2.30	1.4	70
GWL-150-10	150	10	40	2.10	1.2	83
GWL-150-15	150	15.5	40	2.30	1.4	83
GWL-170-10	170	10	40	2.10	1.2	83
GWL-170-15	170	15.5	40	2.30	1.4	83
GWL-190-10	190	10	40	2.10	1.2	83
GWL-190-15	190	15.5	40	2.30	1.4	83
GWL-220-10	220	10	40	2.10	1.2	95
GWL-220-15	220	15.5	40	2.30	1.4	95
GWL-250-10	250	10	40	2.10	1.2	95
GWL-250-15	250	15.5	40	2.30	1.4	95
GWL-280-10	280	10	40	2.15	1.2	95
GWL-280-15	280	15.5	40	2.30	1.4	95
GWL-300-10	300	10	40	2.15	1.2	95
GWL-300-15	300	15.5	40	2.30	1.4	95
GWL-350-10	350	10	40	2.15	1.2	95
GWL-350-15	350	15.5	40	2.30	1.4	95
GWL-400-10	400	10	40	2.15	1.2	108
GWL-400-15	400	15.5	40	2.30	1.4	108
GWL-450-10	450	10	40	2.15	1.2	108
GWL-450-15	450	15.5	40	2.30	1.4	108

**GWL Detector Options**

-LB-AWT	Low-Background Detector with OFHC Cu Endcap and High Purity Al Well Tube, add "-LB-AWT" to the model number [e.g., GWL-350-15-LB-AWT]. Requires selection of a Low-Background LB cryostat.
-XLB-AWT	Extra-Low-Background Detector with OFHC Cu Endcap and High Purity Al Well Tube, add "-XLB-AWT" to the model number [e.g., GWL-150-15-XLB-AWT]. Requires selection of a Low-Background XLB cryostat.
-HJ	Remote preamplifier and high voltage filter for use with HJ type cryostat, add "-HJ" to the model number [e.g., GWL-350-15-HJ]. Requires selection of HJ cryostat.

**GWL Streamline Cryostats**

- May only be purchased with a detector.
- Dewar required. Select dewar from GWL Streamline Dewars.
- Append matching Detector Endcap Size designation to cryostat model: -70, -83, -95, -108 [e.g., CFG-SJ-95 for GWL-280-15 or CFG-SL-XLB-83 for GWL-170-10-XLB-AWT]
- Vertical Cryostats include CFG-ADAPTOR to increase cryostat diameter from 1.25 inch to 1.5 inch for use with DWR-30 and DWR-30-OP.

Model	Description
CFG-HJ	J-type Cryostat with Remote Preamp. (For -HJ option only.)
CFG-SJ	J-type Cryostat
CFG-SL	Side-Looking Cryostat
CFG-SV	Vertical Cryostat (Dipstick type)

**LOW-BACKGROUND**

CFG-HJ-LB	Low-Background J-type Cryostat with Remote Preamp. (For -HJ option only.)
CFG-SJ-LB	Low-Background J- type Cryostat
CFG-SL-LB	Low-Background Side-Looking Cryostat
CFG-SV-LB	Low-Background Vertical Cryostat (Dipstick type)
CFG-SJ-XLB	Extra-Low-Background J- type Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SL-XLB	Extra-Low-Background Side-Looking Cryostat. Includes ~1" thick lead shield between crystal mount and external preamp.
CFG-SV-XLB	Extra-Low-Background Vertical Cryostat (Dipstick type). Includes ~1" thick lead shield between crystal mount and external preamp.

**GWL Streamline Dewars**

Model	Choose	Description
CFG-HJ, SJ, SL	DWR-7.5B	7.5-liter Side-Looking Dewar
	DWR-13B	13-liter Side-Looking Dewar
	DWR-30B	30-liter Side-Looking Dewar
	MOBIUS-B	Möbius Recycler 27-liter Side-Looking Dewar
CFG-SV	DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
	DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
	MOBIUS-ST	Möbius Recycler 27-liter Dewar for purchase stand alone
	MOBIUS-ST-DET	Möbius Recycler 27-liter Dewar for purchase in combination with Detector

**GLP Planar, HPGe Low-Energy Photon Spectrometer (PopTop or Streamline)**

- For Streamline remove the "P4" from the model number.
- If dimensional considerations are critical, contact factory.
- Cryostat and dewar or other cooling device are not included with detector.
- Cryostat and dewar or other cooling device are required for operation.
- A cryostat must be ordered with a Streamline detector.

Model	Active Diameter (mm)	Dimensions		Energy Resolution FWHM		Endcap Diameter (mm)	Be Window Thickness (mm)
		Area (mm <sup>2</sup> )	Depth (mm)	@ 5.9 keV (eV)	@ 122 keV (eV)		
GLP-06165/05P4	≥6	≥28	≥5	≤165	≤480	70	0.13
GLP-10180/07P4	10	80	7	180	485	70	0.13
GLP-16195/10P4	16	200	10	205	525	70	0.13
GLP-25325/10P4	25	500	10	325	550	70	0.25
GLP-25300/13P4	25	500	13	300	545	70	0.25
GLP-32355/10P4	32	800	10	355	580	70	0.25
GLP-32340/13P4	32	800	13	340	570	70	0.25
GLP-36385/10P4	36	1000	10	385	595	70	0.25
GLP-36360/13P4	36	1000	13	360	585	70	0.25

**GLP Detector Options**

-SMN SMART-1 detector option for negative bias detector, add "-SMN" to the model number [e.g. GLP-25300/13P4-SMN or GLP-10180/07-SMN].

**GLP PopTop Cryostats and Dewars**

Model	Description
CFG-PD4-7.5	Down-looking Cryostat with 7.5-liter Dewar
CFG-PD4-13	Down-looking Cryostat with 13-liter Dewar
CFG-PD4-30	Down-looking Cryostat with 30-liter Dewar
CFG-PG4-1.2	Gamma Gage Cryostat with 1.2-liter Dewar
CFG-PG4-3	Gamma Gage Cryostat with 3-liter Dewar
CFG-PG4-5	Gamma Gage Cryostat with 5-liter Dewar
CFG-PH4	Horizontal Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-PMOD4-3	Gamma Gage Cryostat with 3-liter Multi-Orientation Dewar
CFG-PMOD4-7	Gamma Gage Cryostat with 7-liter Multi-Orientation Dewar
CFG-PS4-7.5	Side-Looking Cryostat with 7.5-liter Dewar
CFG-PS4-13	Side-Looking Cryostat with 13-liter Dewar
CFG-PS4-30	Side-Looking Cryostat with 30-liter Dewar
CFG-PS4-MOBIUS-B	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar
CFG-PS4-MOBIUS-B-DET	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar for purchase in combination with any PopTop detector.
CFG-PSHP4	Down-Looking Shallow-Hole Probe with 0.7-liter Dewar
CFG-PV4	Vertical Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
MOBIUS-PT	Möbius Recycler 27-liter Dewar
MOBIUS-PT-DET	Möbius Recycler 27-liter Dewar for purchase in combination with detector and vertical or horizontal dipstick cryostat.
DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
DWR-S/F	Storage/Fill Dewar for CFG-PG4-x

**GLP Streamline Cryostats**

- May only be purchased with a detector.
- Dewar required. Select dewar from GLP Streamline Dewars.
- Horizontal and Vertical Cryostats include CFG-ADAPTOR to increase cryostat diameter from 1.25 inch to 1.5 inch for use with DWR-30 and DWR-30-OP.

Model	Description
CFG-LP-GG-70	Gamma Gage Cryostat
CFG-LP-SD-70	Down-Looking Cryostat
CFG-LP-SH-70	Horizontal Cryostat (Dipstick type)
CFG-LP-SJ-70	J-type Cryostat
CFG-LP-SL-70	Side-Looking Cryostat
CFG-LP-SV-70	Vertical Cryostat (Dipstick type)



**GLP Streamline Dewars**

Model	Choose	Description
CFG-LP-GG	DWR-1.2G	1.2-liter All-Orientation Dewar
	DWR-3.0G	3.0-liter All-Orientation Dewar
	DWR-5.0G	5.0-liter All-Orientation Dewar
	DWR-MOD-3L	3-liter Multi-Orientation Dewar
	DWR-MOD-7L	7-liter Multi-Orientation Dewar
	DWR-0.7-SHP-G	0.7-liter Shallow-Hole Probe Dewar
	DWR-S/F	Storage Fill Dewar for DWR-xG
CFG-LP-SJ, SL	DWR-7.5B	7.5-liter Side-Looking Dewar
	DWR-13B	13-liter Side-Looking Dewar
	DWR-30B	30-liter Side-Looking Dewar
	MOBIUS-B	Möbius Recycler 27-liter Side-Looking Dewar
CFG-LP-SD	DWR-7.5D	7.5-liter Down-Looking Dewar
	DWR-13D	13-liter Down-Looking Dewar
	DWR-30D	30-liter Down-Looking Dewar
CFG-LP-SV, SH	DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
	DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
	MOBIUS-ST	Möbius Recycler 27-liter Dewar for purchase stand alone
	MOBIUS-ST-DET	Möbius Recycler 27-liter Dewar for purchase in combination with Detector

**SGD Planar Safeguards Detectors (PopTop or Streamline)**

- For Streamline remove the "P4" from the model number.
- Available with internal shielding, contact the factory for details.
- If dimensional considerations are critical, contact factory.
- Cryostat and dewar or other cooling device are not included with detector.
- Cryostat and dewar or other cooling device are required for operation.
- A cryostat must be ordered with a Streamline detector.

Model	Active Diameter (mm)	Thickness (mm)	Warranted Resolution (eV) @122 keV		Warranted FW.1M/FWHM @ ≤50 kcps	Warranted FW.02M/FWHM @ ≤50 kcps	Endcap Diameter (mm)	Al Window (mm)
			@ 1 kcps (6 μs)	@ 50 kcps (1 μs)				
SGD-16550P4	16	15	550	615	1.87	2.50	70	1
SGDGLP-06480P4	6	5	480	N/A	N/A	N/A	70	1
SGDGLP-10485P4	10	7	485	N/A	N/A	N/A	70	1
SGDGLP-16525P4	16	10	525	N/A	N/A	N/A	70	1
SGDGLP-25545P4	25	13	545	N/A	N/A	N/A	70	1
SGDGLP-32570P4	32	13	570	N/A	N/A	N/A	70	1
SGDGLP-36585P4	36	13	585	N/A	N/A	N/A	70	1

**SGD Planar Detector Options**

-SMN SMART-1 detector option for negative bias detector, add "-SMN" to the model number [e.g., SGD-16550P4-SMN or SGD-16550-SMN]

**SGD Planar PopTop Cryostats and Dewars**

Model	Description
CFG-PD4-7.5	Down-looking Cryostat with 7.5-liter Dewar
CFG-PD4-13	Down-looking Cryostat with 13-liter Dewar
CFG-PD4-30	Down-looking Cryostat with 30-liter Dewar
CFG-PG4-1.2	Gamma Gage Cryostat with 1.2-liter Dewar
CFG-PG4-3	Gamma Gage Cryostat with 3-liter Dewar
CFG-PG4-5	Gamma Gage Cryostat with 5-liter Dewar
CFG-PH4	Horizontal Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-PMOD4-3	Gamma Gage Cryostat with 3-liter Multi-Orientation Dewar
CFG-PMOD4-7	Gamma Gage Cryostat with 7-liter Multi-Orientation Dewar
CFG-PS4-7.5	Side-Looking Cryostat with 7.5-liter Dewar
CFG-PS4-13	Side-Looking Cryostat with 13-liter Dewar
CFG-PS4-30	Side-Looking Cryostat with 30-liter Dewar
CFG-PS4-MOBIUS-B	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar
CFG-PS4-MOBIUS-B-DET	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar for purchase in combination with any PopTop detector.
CFG-PSHP4	Down-Looking Shallow-Hole Probe with 0.7-liter Dewar
CFG-PV4	Vertical Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-ICS-P4	Integrated Cryocooling System. Includes 2 year warranty on cryocooler, internal controller and active noise cancellation.
MOBIUS-PT	Möbius Recycler 27-liter Dewar
MOBIUS-PT-DET	Möbius Recycler 27-liter Dewar for purchase in combination with detector and vertical or horizontal dipstick cryostat.
DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
DWR-S/F	Storage/Fill Dewar for CFG-PG4-x

**SGD Planar Streamline Cryostats**

- May only be purchased with a detector.
- Dewar required. Select dewar from SGD Planar Streamline Dewars.
- Horizontal and Vertical Cryostats include CFG-ADAPTOR to increase cryostat diameter from 1.25 inch to 1.5 inch for use with DWR-30 and DWR-30-OP.

Model	Description
CFG-LP-GG-70	Gamma Gage Cryostat
CFG-LP-SD-70	Down-Looking Cryostat
CFG-LP-SH-70	Horizontal Cryostat (Dipstick type)
CFG-LP-SJ-70	J-type Cryostat
CFG-LP-SL-70	Side-Looking Cryostat
CFG-LP-SV-70	Vertical Cryostat (Dipstick type)

**SGD Planar Streamline Dewars**

Model	Choose	Description
CFG-LP-GG	DWR-1.2G	1.2-liter All-Orientation Dewar
	DWR-3.0G	3.0-liter All-Orientation Dewar
	DWR-5.0G	5.0-liter All-Orientation Dewar
	DWR-MOD-3L	3-liter Multi-Orientation Dewar
	DWR-MOD-7L	7-liter Multi-Orientation Dewar
	DWR-0.7-SHP-G	0.7-liter Shallow-Hole Probe Dewar
	DWR-S/F	Storage Fill Dewar for DWR-xG
CFG-LP-SJ, SL	DWR-7.5B	7.5-liter Side-Looking Dewar
	DWR-13B	13-liter Side-Looking Dewar
	DWR-30B	30-liter Side-Looking Dewar
	MOBIUS-B	Möbius Recycler 27-liter Side-Looking Dewar
CFG-LP-SD	DWR-7.5D	7.5-liter Down-Looking Dewar
	DWR-13D	13-liter Down-Looking Dewar
	DWR-30D	30-liter Down-Looking Dewar
CFG-LP-SV, SH	DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
	DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
	MOBIUS-ST	Möbius Recycler 27-liter Dewar for purchase stand alone
	MOBIUS-ST-DET	Möbius Recycler 27-liter Dewar for purchase in combination with Detector

**SGD GEM Safeguards Detectors (PopTop or Streamline)**

- For Streamline remove the "P4" from the model number.
- If dimensional considerations are critical, contact factory.
- Cryostat and dewar or other cooling device are not included with detector.
- Cryostat and dewar or other cooling device are required for operation.
- A cryostat must be ordered with a Streamline detector.
- Monte Carlo drawing included.

Model	Active Diameter (mm)	Minimum Thickness (mm)	Nominal Relative Efficiency	Energy	Warranted Resolution			Warranted FW.1M/ FWHM @<1 kcp (6 $\mu$ s)	Warranted FW.02M/ FWHM @<1 kcp (6 $\mu$ s)	Endcap Diameter (mm)
					@ 1 kcps (6 $\mu$ s)	@ 1 kcps (2 $\mu$ s)	@ 30 kcps (2 $\mu$ s)			
SGD-GEM-3615P4	36	15	3	122 keV 1.33 MeV	610 eV 1.65 keV	630 eV 1.75 keV	650 eV 2.00 keV	1.9	2.6	70
SGD-GEM-5030P4	50	30	13	122 keV 1.33 MeV	650 eV 1.70 keV	690 eV 1.85 keV	750 eV 2.05 keV	1.9	2.6	70
SGD-GEM-5050P4	50	50	20	122 keV 1.33 MeV	750 eV 1.75 keV	880 eV 1.95 keV	890 eV 2.10 keV	1.9	2.6	70
SGD-GEM-6560P4	65	60	50	122 keV 1.33 MeV	800 eV 1.80 keV	935 eV 2.05 keV	960 eV 2.15 keV	1.9	2.6	83

**SGD GEM Detector Options**

-SMP SMART-1 detector option for positive bias detector, add "-SMP" to the model number [e.g., SGD-GEM-5050P4-SMP]

**SGD GEM PopTop Cryostats and Dewars**

Model	Description
CFG-PD4-7.5	Down-looking Cryostat with 7.5-liter Dewar
CFG-PD4-13	Down-looking Cryostat with 13-liter Dewar
CFG-PD4-30	Down-looking Cryostat with 30-liter Dewar
CFG-PG4-1.2	Gamma Gage Cryostat with 1.2-liter Dewar
CFG-PG4-3	Gamma Gage Cryostat with 3-liter Dewar
CFG-PG4-5	Gamma Gage Cryostat with 5-liter Dewar
CFG-PH4	Horizontal Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-PMOD4-3	Gamma Gage Cryostat with 3-liter Multi-Orientation Dewar
CFG-PMOD4-7	Gamma Gage Cryostat with 7-liter Multi-Orientation Dewar
CFG-PS4-7.5	Side-Looking Cryostat with 7.5-liter Dewar
CFG-PS4-13	Side-Looking Cryostat with 13-liter Dewar
CFG-PS4-30	Side-Looking Cryostat with 30-liter Dewar
CFG-PS4-MOBIUS-B	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar
CFG-PS4-MOBIUS-B-DET	Side-Looking Cryostat with Möbius Recycler 27-liter Dewar for purchase in combination with any PopTop detector.
CFG-PSHP4	Down-Looking Shallow-Hole Probe with 0.7-liter Dewar
CFG-PV4	Vertical Cryostat (Dipstick type). Dewar not included. Choose DWR-30, DWR-30-OP, MOBIUS-PT or MOBIUS-PT-DET.
CFG-ICS-P4	Integrated Cryocooling System. Includes 2 year warranty on cryocooler, internal controller and active noise cancellation.
MOBIUS-PT	Möbius Recycler 27-liter Dewar
MOBIUS-PT-DET	Möbius Recycler 27-liter Dewar for purchase in combination with detector and vertical or horizontal dipstick cryostat.
DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
DWR-S/F	Storage/Fill Dewar for CFG-PG4-x

**SGD GEM Streamline Cryostats**

- May only be purchased with a detector.
- Dewar required. Select dewar from SGD GEM Streamline Dewars.
- Horizontal and Vertical Cryostats include CFG-ADAPTOR to increase cryostat diameter from 1.25 inch to 1.5 inch for use with DWR-30 and DWR-30-OP.

Model	Description
CFG-GG-70	Gamma Gage Cryostat
CFG-SD-70	Down-Looking Cryostat
CFG-SH-70	Horizontal Cryostat (Dipstick type)
CFG-SJ-70	J-type Cryostat
CFG-SL-70	Side-Looking Cryostat
CFG-SV-70	Vertical Cryostat (Dipstick type)

**SGD GEM Streamline Dewars**

Model	Choose	Description
CFG-GG	DWR-1.2G	1.2-liter All-Orientation Dewar
	DWR-3.0G	3.0-liter All-Orientation Dewar
	DWR-5.0G	5.0-liter All-Orientation Dewar
	DWR-MOD-3L	3-liter Multi-Orientation Dewar
	DWR-MOD-7L	7-liter Multi-Orientation Dewar
	DWR-0.7-SHP-G	0.7-liter Shallow-Hole Probe Dewar
	DWR-S/F	Storage Fill Dewar for DWR-xG
CFG-SJ, SL	DWR-7.5B	7.5-liter Side-Looking Dewar
	DWR-13B	13-liter Side-Looking Dewar
	DWR-30B	30-liter Side-Looking Dewar
	MOBIUS-B	Möbius Recycler 27-liter Side-Looking Dewar
CFG-SD	DWR-7.5D	7.5-liter Down-Looking Dewar
	DWR-13D	13-liter Down-Looking Dewar
	DWR-30D	30-liter Down-Looking Dewar
CFG-SV, SH	DWR-30	30-liter Dewar. Includes collar for 1.5" diameter cryostat.
	DWR-30-OP	30-liter Offset-Port Dewar. Includes collar for 1.5" diameter cryostat.
	MOBIUS-ST	Möbius Recycler 27-liter Dewar for purchase stand alone
	MOBIUS-ST-DET	Möbius Recycler 27-liter Dewar for purchase in combination with Detector

**ACTINIDE-85 Lung Monitor Detector (PopTop or Streamline)**

Model	Description
ACT85	ACTINIDE-85 detector, CFG-GG-LB-C-108 low-background cryostat with Carbon Fiber endcap and DWR-3.5HF high-fill dewar
ACT85P4-RB	ACTINIDE-85 detector in reduced background PopTop capsule with Carbon Fiber endcap

**ACTINIDE-85 Detector Options**

-SMP	SMART-1 detector option for positive bias detector, add "-SMP" to the model number [e.g., ACT85-SMP, ACT85P4-RB-SMP].
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**PINS System Detector (PopTop)**

Model	Description
PINS-GMX	GAMMA-X Detector for PINS-2 System. Includes CFG-MG4-1.2 Dewar/Cryostat and SMART-1 option for negative bias detector.

**TETRAD Detector**

Model	Description
TETRAD-20	20% N-type Detector System. Includes 4 each 20% N-type detectors and 5.0-liter All-Orientation Dewar/Cryostat.

**CryoSecure Option for Mechanical Cooler**

Model	Description
CRYOSECURE	Compressor Power Controller

**Lead Shields and Accessories**

Model	Description
HPLBS1	Top Loading Lead Shield for PV, SV, and ICS cryostats. Includes stand.
HPLBS1F	Front Loading Lead Shield for PV, SV, and ICS cryostats. Includes stand.
HPLBS2	Top Loading Lead Shield for SJ and HJ cryostats. Includes stand.
HPLBS2F	Front Loading Lead Shield for SJ and HJ cryostats. Includes stand.
HPULB4S1	Top Loading Lead Shield for PV, SV, and ICS cryostats
HPULB4S2	Top Loading Lead Shield for SJ and HJ cryostats
HPULB6S2F	Front Loading Lead Shield for HJ cryostats
LFT1	Lifting tool for removing the 9" bottom plate from the HPLBS1 or HPULB4S1 Lead Shield
PLG1	Single piece, close fit plug for vertical dipstick cryostat in HPLBS1 or HPULB4S1 Lead Shield
PLG1F	Two piece, close fit plug for vertical dipstick cryostat in HPLBS1F Lead Shield
PLG2	Two piece, close fit plug for X-COOLER cold head in HPLBS1 or HPULB4S1 Lead Shield
DS30	Dewar Leveling Stand
LSLT	Table-Top Leveling Option (HPLBS1, HPLBS1F, or HPULB4S1 Only)

**Liquid Nitrogen Level Monitor**

Model	Description
729A	Liquid Nitrogen Level Monitor for all Ge and Si(Li) detectors (without probe)
LNP-7D	Probe for use with 729A; fits standard 7.5-liter bucket type dewar
LNP-30B	Probe for use with 729A; fits 30-liter bucket type dewar
LNP-30D-2	Probe for use with 729A; used on dipstick cryostat CFG-PH4 or CFG-PV4. Center hole is 1.5-in.
LNP-30D-3	Probe for use with 729A; used on all dipstick cryostats except CFG-PH4 or CFG-PV4. Center hole is 1.25-in.

**Photon Detector Accessories**

Model	Description
CFG-ADAPTOR	Adaptor to increase cryostat diameter from 1.25 inch to 1.5 inch
CLAMP-1.25	Detector clamp for 1.25" dipstick diameter
CLAMP-1.50	Detector clamp for 1.50" dipstick diameter
CRE-1	4-in. Cooling Rod Extension; used on dipstick detectors
DIM-POSGE	Detector interface module for non-SMART positive bias HPGe detector
DIM-NEGGE	Detector interface module for non-SMART negative bias HPGe detector
DWR-30-NC	30-liter Dewar without collar
HT-1	Heater Tape
ICS STAND 2	Vertical Orientation Height Adjustment Stand for ICS cooled detectors
LNTC1.25R	Liquid Nitrogen Transfer Collar with fill/vent tubes to fit a 1.25" diameter cryostat (all mounting hardware included)
LNTC1.5R	Liquid Nitrogen Transfer Collar with fill/vent tubes to fit a 1.5" diameter cryostat (all mounting hardware included)
M-1-T1	Variable Length Tripod
MOBIUS	Möbius Recycler 27-liter dewar for horizontal or vertical dipstick cryostat. Includes 1.5" diameter collar.
PTPA	PopTop Pumpout Adapter
PTVSO	PopTop Valve Shaft Operator
SDT-1	Step-Down Transformer (220 V/110 V)
SENSADPTR	Vent Port Sensor Installation Adapter for MOD Dewar
SMART-INTERFACE	SMART Detector to Non-SMART Electronics Interface Cable
VVO-1	Vacuum Valve Operator
VVO-2	Old Style Vacuum Valve Operator
469	For use with ORTEC Detectors with other manufacturer's HV supplies equipped with shutdown circuitry with HV on in open circuit condition and HV off in short circuit condition.
496D-1	Digital Temperature Controller with Heater Tape
496D-2	Digital Temperature Controller with Heater Tape and Step-Down Transformer
596-A	Temperature Controller for detectors with internal heater elements inside special cryostats

**Automatic and Manual Liquid Nitrogen Transfer System Components**

Model	Description
B/PFA-1.2	Bayonet/Pressure Fill Adapter for 1.2-liter dewar
B/PFA-3.0	Bayonet/Pressure Fill Adapter for 3.0-liter dewar
B/PFA-5.0	Bayonet/Pressure Fill Adapter for 5.0-liter dewar
DWR-30	30-Liter Dewar
DWR-30-OP	30-Liter Offset-Port Dewar
DWR-S/F	Optional Storage Fill Dewar for CFG-PG4-x or DWR-xG
FFMOD3L-H	Funnel for filling MOD3L dewar horizontally
FFMOD7L-H	Funnel for filling MOD7L dewar horizontally
NTC/7.5B	Nitrogen Transfer Collar (with pressure plates) for 7.5-liter bucket
NTC/13	Nitrogen Transfer Collar (with pressure plates) for 13-liter bucket
NTC/15B	Nitrogen Transfer Collar (with pressure plates) for 15-liter bucket
NTC/30	Nitrogen Transfer Collar (with pressure plates) for 30-liter bucket
PFB-MOD3L	Pressure Fill Bayonet for DWR-MOD-3L or CFG-PMOD4-3
PFB-MOD7L	Pressure Fill Bayonet for DWR-MOD-7L or CFG-PMOD4-7
SDT-1	Step-Down Transformer (220 V/110 V)
STD 50L	50-Liter Dewar
TL-3	Transfer Line, 3-ft. length
TL-6	Transfer Line, 6-ft. length
TL-9	Transfer Line, 9-ft. length
TL-12	Transfer Line, 12-ft. length
TL-15	Transfer Line, 15-ft. length
TL-18	Transfer Line, 18-ft. length
TL-21	Transfer Line, 21-ft. length
TL-24	Transfer Line, 24-ft. length
TL-OFFSTD	Transfer Line, specify 25–40 ft.length
VL-6	Vent Line, 6-ft. length
VL-9	Vent Line, 9-ft. length
VL-12	Vent Line, 12-ft. length
VL-15	Vent Line, 15-ft. length
VL-18	Vent Line, 18-ft. length
VL-21	Vent Line, 21-ft. length
VL-24	Vent Line, 24-ft. length
VL-30	Vent Line, 30-ft. length
WD-30	Withdrawal Device (30-liter dewar)
WD-50	Withdrawal Device (50-liter dewar)

**Scintillation Detectors and Accessories**

- NaI detectors are not CE or ROHS compliant and must be ordered as a Special if compliance is required.

Model	Description
2BY2	Rugged Integrated 2" by 2" NaI detector with HV and Preamplifier. <b>NON ROHS.</b>
2BY2-DD	Rugged Integrated 2" by 2" NaI detector with HV and Preamplifier. For use with DigiDART. <b>NON ROHS.</b>
3BY3	Rugged Integrated 3" by 3" NaI detector with HV and Preamplifier. <b>NON ROHS.</b>
3BY3-DD	Rugged Integrated 3" by 3" NaI detector with HV and Preamplifier. For use with DigiDART. <b>NON ROHS.</b>
905-1	NaI Scintillation Detector, 1x1-in. crystal, 2-in. tube. <b>NON ROHS.</b>
905-3	NaI Scintillation Detector, 2x2-in. crystal, 2-in. tube. <b>NON ROHS.</b>
905-4	NaI Scintillation Detector, 3x3-in. crystal, 3-in. tube. <b>NON ROHS.</b>
905-16	NaI Scintillation Detector, 4x4x16-in. crystal, 3-in. tube. <b>NON ROHS.</b>
905-21	Fast plastic detector assembly including a 1.25" diameter to .75" diameter truncated cone, 1" thick detector element, Hamamatsu R329-02 PMT or equivalent, 265A tube base, and 218 mu metal shield.
DIM-POSNAI	Detector interface module for positive bias NaI detector.
LABR-1X1	LaBr3(Ce) scintillation detector, 1 x 1-in. crystal with 1.5-in. diameter 14-pin PMT; resolution 3.5% guaranteed. St. Gobain Part No. 2-4-7174.
LABR-1.5X1.5	LaBr3(Ce) scintillation detector, 1.5 x 1.5-in. crystal with 2-in. diameter 14-pin PMT; resolution 3.0% target. St. Gobain Part No. 2-4-6115.
LABR-2X2	LaBr3(Ce) scintillation detector, 2 x 2-in. crystal with 2-in. diameter 14-pin PMT; resolution 3.5% target. St. Gobain Part No. 2-4-6288.
LABR-3X3	LaBr3(Ce) scintillation detector, 3 x 3-in. crystal with 3-in. diameter 14-pin PMT; resolution 3.5% target. St. Gobain Part No. 2-4-7175.
LEAD SHIELD G-5	Table-Top Lead Shield for NaI detector

**Silicon Drift Detectors from Amptek**

Model	Description
X123-25-12BE	Amptek X-123 with 25 mm <sup>2</sup> Standard SDD and 12 μm Be Window
X123F-25-12BE	Amptek X-123 with 25 mm <sup>2</sup> Fast SDD and 12 μm Be Window
X123F-25-40SN	Amptek X-123 with 25 mm <sup>2</sup> Fast SDD and 40 nm Silicon Nitride (Si <sub>3</sub> N <sub>4</sub> ) Window
X123F-70-12BE	Amptek X-123 with 70 mm <sup>2</sup> Fast SDD and 12 μm Be Window
X123F-70-40SN	Amptek X-123 with 70 mm <sup>2</sup> Fast SDD and 40 nm Silicon Nitride (Si <sub>3</sub> N <sub>4</sub> ) Window



**Exempt Quantity Sealed Radioactive Sources**

- The following sources, mounted in 2.5 cm diameter sealed plastic disks, are exempt from USNRC and State licensing and present no special storage or disposal requirements.
- These sources are manufactured by: SPECTRUM TECHNIQUES, Oak Ridge, TN.

**U.S. Customers order:**

Model	Description
RSS3	Set of three solid sources: Po-210 (0.1 $\mu$ Ci), Sr-90 (0.1 $\mu$ Ci), and Co-60 (1.0 $\mu$ Ci)
RSS5	Set of five solid sources: Po-210 (0.1 $\mu$ Ci), Sr-90 (0.1 $\mu$ Ci), Tl-204 (1 $\mu$ Ci), Co-60 (1 $\mu$ Ci), and Cs-137 (5 $\mu$ Ci)
RSS8	Set of eight gamma sources for scintillation spectrometry: Ba-133 (1 $\mu$ Ci), Cd-109 (1 $\mu$ Ci), Co-57 (1 $\mu$ Ci), Co-60 (1 $\mu$ Ci), Cs-137 (1 $\mu$ Ci), Mn-54 (1 $\mu$ Ci), Na-22 (1 $\mu$ Ci), and a mixed source of Cs-137 (0.5 $\mu$ Ci) and Zn-65 (1 $\mu$ Ci)

**Non-U.S. Customers order:**

Model	Description
RSS3UN	Set of three solid sources: Po-210 (0.1 $\mu$ Ci), Sr-90 (0.1 $\mu$ Ci), and Co-60 (0.5 $\mu$ Ci)
RSS5-EXP	Set of five solid sources: Po-210 (0.1 $\mu$ Ci), Sr-90 (0.1 $\mu$ Ci), Tl-204 (0.25 $\mu$ Ci), Co-60 (1 $\mu$ Ci), and Cs-137 (0.25 $\mu$ Ci)
RSS8EXP	Set of eight gamma sources for scintillation spectrometry: Ba-133 (1 $\mu$ Ci), Cd-109 (1 $\mu$ Ci), Co-57 (1 $\mu$ Ci), Co-60 (1 $\mu$ Ci), Cs-137 (0.25 $\mu$ Ci), Mn-54 (1 $\mu$ Ci), Na-22 (1 $\mu$ Ci), and Zn-65 (1 $\mu$ Ci)

**Chart of Radioactive Decay**

Model	Radioactive Material	Standard Activity/Source ( $\mu$ Ci)	UCNRC 30.71		Half-life <sup>†</sup>	Radiation	Energy <sup>†</sup> (keV)	Branch <sup>†</sup> (%)	Feeds
			Schedule B Exempt Quantities ( $\mu$ Ci)						
Ba-133	Barium 133	1	10	10.7 y	$\gamma$	81	32.8		
						276.3	7.3		
						302.7	18.6		
						355.9	62.3		
						383.7	8.8		
Cd-109	Cadmium 109	1	10	453.4d	$\gamma$	88	3.8		
Cs-137	Cesium 137	1 & 5	10	30.1 y	$\gamma$	32.2	3.7		
						661.6	84.6		
						511.6	94.6		
Co-57	Cobalt 57	1	100	270 d	$\gamma$	14.4	9.5		
						122.1	85.6		
						136.4	10.6		
Co-60	Cobalt 60	1	1	5.3 y	$\gamma$	1173.2	99.9		
						1332.5	99.9		
						317.9	100.0		
Mn-54	Manganese 54	1	10	312.2 d	$\gamma$	834.8	99.9		
Po-210	Polonium 210	0.1	0.1	138.4 d	$\alpha$	5304.5	99.9		
Na-22	Sodium 22	1	10	2.60 y	$\gamma$	511	179.8		
Sr-90	Strontium 90	0.1	0.1	28.5 y	$\beta$	546	100.0		
				64.1 hr	$\beta$	2283.9	99.9	Y-90	
Tl-204	Thallium 204	1	10	3.8 y	$\beta$	763.4	97.4		
Zn-65	Zinc 65	1	10	243.8 d	$\gamma$	1115.5	50.8		
Pb-210	Lead Nitrate	0.1	0.1	20.4 y	$\gamma$	46.5	4.0		
				5 d	$\beta$	63	19.8		
				138.4 d	$\beta$	1161.4	100.0	Bi-210	
					$\alpha$	5304.5	99.9	Po-210	

<sup>†</sup>Half-life, Energy, and Branch Ratio data reproduced from: Nuclide Navigator II nuclide database software program, Version 2.00, November 22, 1996, from ORTEC.

**Amplifiers**

Model	Description	Width
FTA820A	Octal Fast-Timing Amplifier (200 gain, non-inverting).	NIM-1
427A	Delay Amplifier. <b>NON ROHS.</b>	NIM-1
460	Delay Line Amplifier (with standard 1- $\mu$ s delay lines)	NIM-1
474	Timing Filter Amplifier. <b>NON ROHS.</b>	NIM-1
533	Dual Sum and Invert Amplifier. <b>NON ROHS.</b>	NIM-1
570	Spectroscopy Amplifier	NIM-1
572A	Spectroscopy Amplifier. <b>NON ROHS.</b>	NIM-1
575A	Spectroscopy Amplifier. <b>NON ROHS.</b>	NIM-1
579	Fast-Filter Amplifier	NIM-1
590A	Amplifier and Timing SCA. <b>NON ROHS.</b>	NIM-1
671	Spectroscopy Amplifier	NIM-1
672	Spectroscopy Amplifier (with AUTO-PZ)	NIM-2
673	Spectroscopy Amplifier and Gated Integrator	NIM-2
855	Dual Spectroscopy Amplifier	NIM-1
863	Quad Timing Filter Amplifier. <b>NON ROHS.</b>	NIM-1
9302	Amplifier and Discriminator. <b>NON ROHS.</b>	NIM-1
9309-4	Quad Fast Amplifier	NIM-1
9310-16	16 Channel Fast Amplifier	NIM-1
9327	1-GHz Amplifier and Timing Discriminator. <b>NON ROHS.</b>	PREAMP

**Counters, Timers, and Ratemeters**

Model	Description	Width
EASY-MCS	Multichannel Scaler with Software	
EASY-PKG-1	EASY-MCA-2K Multichannel Analyzer with MAESTRO software and EASY-MCS Multichannel Scaler with software.	
EASY-PKG-2	EASY-MCA-8K Multichannel Analyzer with MAESTRO software and EASY-MCS Multichannel Scaler with software.	
MCS-PCI-OPT2	Fan-Out Cable for MCS-PCI	
449	Log/Lin Ratemeter. <b>NON ROHS.</b>	NIM-2
449-2	Log/Lin Ratemeter with audible output option. <b>NON ROHS.</b>	NIM-2
661	Ratemeter. <b>NON ROHS.</b>	NIM-1
871	Timer and Counter (non-printing). <b>NON ROHS.</b>	NIM-2
928	Combination MCB/Quad Counter/Dual Timer module. Includes MAESTRO software, Front Panel software and USB cable.	NIM-1
928-COUNT2	Dual Counter/Single Timer module. Includes Front Panel software and USB cable.	NIM-1
928-COUNT4	Quad Counter/Dual Timer module. Includes Front Panel software and USB cable.	NIM-1
974A	CCNIM Quad 100-MHz Counter/Timer. <b>NON ROHS.</b>	NIM-2
976	Quad 250-MHz Counter/Timer	NIM-2
978	Dual Timer	NIM-1
994	CCNIM Dual Counter and Timer (requires interface option for computer operation). <b>NON ROHS.</b>	NIM-2
995	CCNIM Dual Counter (requires interface option for computer operation). <b>NON ROHS.</b>	NIM-2
996	CCNIM Timer and Counter (requires interface option for computer operation). <b>NON ROHS.</b>	NIM-1
9349	Log/Lin Ratemeter. <b>NON ROHS.</b>	
994, 995, and 996 Options		
99X-1	RS-232-C Interface Option (requires C-75 Cable). <b>NON ROHS.</b>	
99X-4	Internal +6 V Supply Option (available only for 994 and 995). <b>NON ROHS.</b>	
C-75	RS-232-C Null Modem Cable, female-to-female (3-m length)	
C-80	RS-232-C Extension Cable, male-to-female (3-m length)	
C-488-2	IEEE-488 Interface Cable (2-m length)	
C-488-4	IEEE-488 Interface Cable (4-m length)	

**Delays, Gate and Delay Generators, Logic Modules, and Linear Gates**

Model	Description	Width
CO4020	Quad 4-Input Logic Unit (requires 6 V). <b>NON ROHS.</b>	NIM-1
DB463	Delay Box.	RACK
GG8020	Octal Gate and Delay Generator (requires 6 V) <b>NON ROHS.</b>	NIM-1
414A	Fast Coincidence. <b>NON ROHS.</b>	NIM-2
416A	Gate and Delay Generator. <b>NON ROHS.</b>	NIM-1
418A	Universal Coincidence. <b>NON ROHS.</b>	NIM-1
425A	Nanosecond Delay. <b>NON ROHS.</b>	NIM-1
426	Linear Gate. <b>NON ROHS.</b>	NIM-1
499	Fast/Slow NIM Logic Converter.	NIM-1
542	Linear Gate and Stretcher. <b>NON ROHS.</b>	NIM-1

**Digital Current Integrator**

Model	Description	Width
439	Digital Current Integrator. <b>NON ROHS.</b>	NIM-3

**Fast-Timing Discriminators**

Model	Description	Width
CF8000	Octal Constant-Fraction Discriminator. <b>NON ROHS.</b>	NIM-1
CFD-DELAY-5NS	Delay Plug-in for CF8000	
CFD-DELAY-10NS	Delay Plug-in for CF8000	
CFD-DELAY-30NS	Delay Plug-in for CF8000	
CFD-DELAY-50NS	Delay Plug-in for CF8000	
583B	Constant-Fraction Differential Discriminator/SCA (requires 6 V). <b>NON ROHS.</b>	NIM-1
584	Constant-Fraction Discriminator. <b>NON ROHS.</b>	NIM-1
9302	Amplifier and Discriminator. <b>NON ROHS.</b>	NIM-1
9307	pico-TIMING Discriminator (requires 6 V). <b>NON ROHS.</b>	NIM-1
9327	1-GHz Amplifier and Timing Discriminator	PREAMP

**HV Bias/NIM Power Supplies and Bins**

Model	Description	Width
428	Detector Bias Supply. <b>NON ROHS.</b>	NIM-2
469	For use with ORTEC Detectors with other manufacturer's HV supplies equipped with shutdown circuitry with HV-on in open circuit condition and HV-off in short circuit condition.	
556	High-Voltage Power Supply (3 kV)	NIM-2
556H	High-Voltage Power Supply (3 kV)	NIM-2
659	5-kV Detector Bias Supply	
660	Dual 5-kV Detector Bias Supply	NIM-1
710	Quad 1-kV Bias Supply. <b>NON ROHS.</b>	NIM-1
4001A	NIM Bin	NIM-2
4001A/4002A	NIM Bin and 96-W Power Supply (with $\pm 12$ V, $\pm 24$ V)	
4001A/4002D	NIM Bin and 160-W Power Supply (with $\pm 6$ V, $\pm 12$ V, $\pm 24$ V)	
4001C	NIM Bin (with copper bus bars)	
4001C/4002D	NIM Bin (with copper bus bars) and 160-W Power Supply (with $\pm 6$ V, $\pm 12$ V, $\pm 24$ V)	
4001C/4002E	NIM Bin (with copper bus bars) and BLACK MAX PS (with $\pm 6$ V, $\pm 12$ V, $\pm 24$ V)	
4002A	96-W Power Supply for NIM Bin (with $\pm 12$ V, $\pm 24$ V)	
4002D	160-W Power Supply for NIM Bin (with $\pm 6$ V, $\pm 12$ V, $\pm 24$ V)	
4002E	BLACK MAX Power Supply for NIM Bin (with $\pm 6$ V, $\pm 12$ V, $\pm 24$ V)	
4002P	Portable Power Supply (with $\pm 12$ V, $\pm 24$ V). <b>NON ROHS.</b>	
4002P-C1	Preamp Power Fan-Out Cable for 4002P	
4003	Preamplifier Power Output	
4006	Mini Bin and Power Supply	NIM-1

**Multichannel Scalers and/or Multiple-Stop Time Spectrometers**

Model	Description
EASY-MCS	Multichannel Scaler with Software
EASY-PKG-1	EASY-MCA-2K Multichannel Analyzer with MAESTRO software and EASY-MCS Multichannel Scaler with software.
EASY-PKG-2	EASY-MCA-8K Multichannel Analyzer with MAESTRO software and EASY-MCS Multichannel Scaler with software.
MCS-PCI-OPT2	Fan-Out Cable MCS

**Non-NIM MCA**

Model	Description
EASY-MCA-2K	2k Multichannel Analyzer with MAESTRO Software
EASY-MCA-8K	8k Multichannel Analyzer with MAESTRO Software
EASY-PKG-1	EASY-MCA-2K Multichannel Analyzer with MAESTRO software and EASY-MCS Multichannel Scaler with software.
EASY-PKG-2	EASY-MCA-8K Multichannel Analyzer with MAESTRO software and EASY-MCS Multichannel Scaler with software.

**NIM MCAs and MCBs**

Model	Description	Width
ASPEC-927	Dual 16k Multichannel Buffer with MAESTRO Software and 10-ft. USB Cable	NIM-1
927-OPT1	Female BNC adapter cable for Sample Changer I/O on ASPEC-927	
927-PKG-1	ASPEC-927 with MAESTRO, GammaVision Software and 10-ft. USB Cable	
928	Combination MCB/Quad Counter/Dual Timer module. Includes MAESTRO software, Front Panel software and USB cable.	NIM-1
928-MCB	16k MCB module. Includes MAESTRO software and USB cable.	NIM-1

**Interface and Cable for NIM MCB**

DPM-USB	Dual-Port Memory to USB Interface Converter, 15-ft cable
DPM-UPGRADE-USB	DPM-USB and CONNECTIONS Driver Update to MAESTRO
DPM-M32-USB	DPM-USB with Complete MAESTRO Upgrade

**Photomultiplier Tube Bases**

Model	Description
218	Magnetic Shield
265A	Photomultiplier Base
266	Photomultiplier Base
269	Photomultiplier Base
276	Photomultiplier Base with Preamplifier
276L	Low-Power Photomultiplier Base.
296	ScintiPack High-Rate PMT Base with Preamplifier and HV Supply
296-ADAPT	Signal Break-Out Adaptor for 296
DIM-296	296 ScintiPack High-Rate PMT Base for use with DigiDart or DSPEC jr 2.0
digiBASE	14-Pin PMT Base for NaI Applications. Complete with Digital MCA, Preamplifier, High Voltage Supply, and MAESTRO Software. USB Connection.
digiBASE-CH	DigiBASE with USB connection only. NO software.
digiBASE-PKG-1	DigiBASE with A66SV-BW software
digiBASE-E	High Performance 14-Pin PMT Base for Scintillation Detectors. Complete with Digital MCA, Preamplifier, High Voltage Supply, and MAESTRO Software. PoE Ethernet Connection.
digiBASE-E-PKG-1	DigiBASE-E with A66SV-BW software

**Preamplifiers**

Model	Description	Width
VT120A	Fast-Timing Preamplifier (200 gain, non-inverting)	PREAMP
VT120B	Fast-Timing Preamplifier (200 gain, inverting)	PREAMP
VT120C	Fast-Timing Preamplifier (20 gain, non-inverting)	PREAMP
C-VT120	Power Cable Assembly for VT120A/B/C (3-m length)	
113	Scintillation Preamplifier	PREAMP
142A	Preamplifier. <b>NON ROHS.</b>	PREAMP
142B	Preamplifier. <b>NON ROHS.</b>	PREAMP
142C	Preamplifier. <b>NON ROHS.</b>	PREAMP
142AH	Preamplifier	PREAMP
142IH	Preamplifier	PREAMP
142PC	Preamplifier	PREAMP
9301	Fast Preamplifier. <b>NON ROHS.</b>	PREAMP
9305	Fast Preamplifier. <b>NON ROHS.</b>	PREAMP
9306	1-GHz Preamplifier	PREAMP
9326	Fast Preamplifier with 3-m DC power cable. <b>NON ROHS.</b>	PREAMP

**Pulse Generators**

Model	Description	Width
419	Precision Pulse Generator. <b>NON ROHS.</b>	NIM-2
480	Pulser. <b>NON ROHS.</b>	NIM-1

**Single-Channel Pulse-Height Analyzers**

Model	Description	Width
550A	Single-Channel Analyzer. <b>NON ROHS.</b>	NIM-1
551	Timing Single-Channel Analyzer. <b>NON ROHS.</b>	NIM-1
552	Pulse-Shape Analyzer/Timing SCA. <b>NON ROHS.</b>	NIM-1
850	Quad Single-Channel Analyzer (requires 6 V). <b>NON ROHS.</b>	NIM-1

**Time-to-Amplitude Converters and Time Calibrator**

Model	Description	Width
462	Time Calibrator. <b>NON ROHS.</b>	NIM-2
566	Time-to-Amplitude Converter. <b>NON ROHS.</b>	NIM-1
567	Time-to-Amplitude Converter/SCA. <b>NON ROHS.</b>	NIM-2

**Cables, Connectors, and Accessories**

Model	Description
BL050	BNC/LEMO Adapter with male BNC and female LEMO
BNC/SMA	BNC to SMA Adapter with male BNC and female SMA
C-USB-HUB-4B	4-Port USB Hub
C-USB-HUB-7B	7-Port USB Hub
C-13	BNC to Microdot Vacuum Feedthrough with female BNC and male Microdot
C-16	Microdot to BNC Adapter with male Microdot and female BNC
C-17	BNC to Microdot Adapter with male BNC and female Microdot
C-18-X-S	Microdot 100- $\Omega$ Miniature Cable with two Microdot male plugs; X=length, ft
C-18-0	Microdot 100- $\Omega$ Miniature Cable with two Microdot male plugs; 2-in. length
C-18-2	Microdot 100- $\Omega$ Miniature Cable with two Microdot male plugs; 2-ft length
C-19-X-S	Microdot 100- $\Omega$ Miniature Cable with one each BNC and Microdot male plug; X=length, ft
C-19-2	Microdot 100- $\Omega$ Miniature Cable with one each BNC and Microdot male plug
C-21	Microdot 293-3913 Miniature 100- $\Omega$ cable; X=length, ft
C-22	Microdot male plug for Miniature 100- $\Omega$ Cable
C-23	Assembly Tool for C-21 and C-22
C-24-X-S	RG-62A/U 93- $\Omega$ Cable with two BNC male plugs; X=length, ft
C-24-5	RG-62A/U 93- $\Omega$ Cable with two BNC male plugs; 6-in. length
C-24-1	RG-62A/U 93- $\Omega$ Cable with two BNC male plugs; 1-ft length
C-24-2	RG-62A/U 93- $\Omega$ Cable with two BNC male plugs; 2-ft length
C-24-4	RG-62A/U 93- $\Omega$ Cable with two BNC male plugs; 4-ft length
C-24-8	RG-62A/U 93- $\Omega$ Cable with two BNC male plugs; 8-ft length
C-24-12	RG-62A/U 93- $\Omega$ Cable with two BNC male plugs; 12-ft length
C-25-X-S	RG-58A/U 50- $\Omega$ Cable with two BNC male plugs; X=length, ft
C-25-5	RG-58A/U 50- $\Omega$ Cable with two BNC male plugs; 6-in length
C-25-1	RG-58A/U 50- $\Omega$ Cable with two BNC male plugs; 1-ft length
C-25-2	RG-58A/U 50- $\Omega$ Cable with two BNC male plugs; 2-ft length
C-25-4	RG-58A/U 50- $\Omega$ Cable with two BNC male plugs; 4-ft length
C-25-8	RG-58A/U 50- $\Omega$ Cable with two BNC male plugs; 8-ft length
C-25-12	RG-58A/U 50- $\Omega$ Cable with two BNC male plugs; 12-ft length
C-27	Terminator, 100- $\Omega$ , BNC male plug
C-28	Terminator, 50- $\Omega$ , BNC male plug
C-29	BNC Tee Connector
C-30	Microdot to Microdot Connector with female Microdot on both ends
C-31	BNC to Microdot Adapter with male BNC and male Microdot
C-34-X-S	RG-59B/U 75- $\Omega$ Cable with one each SHV female and MHV male plug; X=length, ft
C-34-12	RG-59B/U 75- $\Omega$ Cable with one each SHV female and MHV male plug; 12-ft length
C-36-X-S	RG-59B/U 75- $\Omega$ Cable with two SHV female plugs; X=length, ft
C-36-2	RG-59B/U 75- $\Omega$ Cable with two SHV female plugs; 2-ft length
C-36-12	RG-59B/U 75- $\Omega$ Cable with two SHV female plugs; 12-ft length
C-37	SHV Female Plug
C-38	SHV Male Bulkhead Jack

**Cables, Connectors, and Accessories (continued)**

Model	Description
C-43-X-S	RG-59B/U 75-Ω Cable with one SHV female plug and one open end; X=length, ft
C-45-X-S	RG-62A/U 93-Ω Cable with one each SHV female and BNC male plug; X=length, ft
C-46	SHV Tee Connector
C-62	BNC Connector, female-to-female
C-63	SHV Connector, male-to-male
C-75	RS-232-C Null Modem Cable, female-to-female (3-m length)
C-80	RS-232-C Extension Cable, male-to-female (3-m length)
C-488-2	IEEE-488 Interface Cable (2-m length)
C-488-4	IEEE-488 Interface Cable (4-m length)
IT100	Inverting Transformer
LB050	LEMO/BNC Adapter with male LEMO and female BNC
LL174-X-S	RG-174 50-Ω Cable with two LEMO male plugs; X=length, ft
LL174-0	RG-174 50-Ω Cable with two LEMO male plugs; 0.1-m length
LL174-1	RG-174 50-Ω Cable with two LEMO male plugs; 0.25-m length
LL174-2	RG-174 50-Ω Cable with two LEMO male plugs; 0.5-m length
LL174-3	RG-174 50-Ω Cable with two LEMO male plugs; 1-m length
LL174-4	RG-174 50-Ω Cable with two LEMO male plugs; 2-m length
LT050	50-Ω Terminator, LEMO
MT050	50-Ω Matched Tee Signal Splitter
PRN-C-2	Printer Port Cable, male to female, 25 pin conductor; 2-ft length
PRN-C-10	Printer Port Cable, male to female, 25 pin conductor; 10-ft length
SMA50	50-Ω SMA Terminator
SMA58-0.15	RG58U 50-Ω Coaxial Cable with SMA connectors; 0.15-m length
SMA58-0.5	RG58U 50-Ω Coaxial Cable with SMA connectors; 0.5-m length
SMA58-1.5	RG58U 50-Ω Coaxial Cable with SMA connectors; 1.5-m length
SMA/BNC	SMA to BNC Adapter with male SMA and female BNC
T50	50-Ω Terminator, BNC ( $\pm 1\%$ , 1/2 W)
TA050	Tee Adapter, LEMO
TF50	50-Ω Feedthrough Terminator, BNC ( $\pm 2\%$ , 1 W)
USB-CONC-110	5-Port USB Concentrator. 110 Volt. Allows up to 5 ORTEC USB MCAs to be connected to a PC over ethernet via TCPIP Protocol.
USB-CONC-220	5-Port USB Concentrator. 220 Volt. Allows up to 5 ORTEC USB MCAs to be connected to a PC over ethernet via TCPIP Protocol.
USBEXT	USB Active Extension Cable. 5-m (16.4 ft).
121-C1	Preamplifier Power Cable Extender; 10-ft length. M-F 9-pin D connectors.
121-C1-X-S	Preamplifier Power Cable Extender; X=length, ft
400-1B	Blank Panel, single-width NIM
400-2B	Blank Panel, double-width NIM
400-3B	Blank Panel, triple-width NIM
400A	Blank NIM Module
400B	Blank NIM Module
400C	Blank NIM Module
401-C3	Module Extender Cable; 3-ft length
401-C3-X-S	Module Extender Cable; X=length, ft

**Detective X Light-Weight Portable Identifier**

Model	Description
DETECTIVE-X	3 MeV Enhanced Capability, Ultra-Light-Weight, Portable High Efficiency HPGe Identifier (Gamma only). Includes GPS, mains adapter, vehicle power cable, USB flash drive, shoulder strap, Bluetooth headset, Sleuth interface, RAPID interface, TRANS-SPEC application, MAESTRO-PRO software and wheeled hard-sided case.
DETECTIVE-X-N	3 MeV Enhanced Capability, Ultra-Light-Weight, Portable High Efficiency HPGe Identifier (Gamma and Neutron). Includes GPS, mains adapter, vehicle power cable, USB flash drive, shoulder strap, Bluetooth headset, Sleuth interface, RAPID interface, TRANS-SPEC application, MAESTRO-PRO software and wheeled hard-sided case.
DETECTIVE-X-8	8 MeV Enhanced Capability, Ultra-Light-Weight, Portable High Efficiency HPGe Identifier (Gamma only). Includes GPS, mains adapter, vehicle power cable, USB flash drive, shoulder strap, Bluetooth headset, Sleuth interface, RAPID interface, TRANS-SPEC application, MAESTRO-PRO software and wheeled hard-sided case.
DETECTIVE-X-8-N	8 MeV Enhanced Capability, Ultra-Light-Weight, Portable High Efficiency HPGe Identifier (Gamma and neutron). Includes GPS, mains adapter, vehicle power cable, USB flash drive, shoulder strap, Bluetooth headset, Sleuth interface, RAPID interface, TRANS-SPEC application, MAESTRO-PRO software and wheeled hard-sided case.
DETECTIVE-X-ACC-BAT	Lithium-Ion Battery.
DETECTIVE-X-ACC-DUAL-CHGR	Standalone dual battery charger and calibrator.
DETECTIVE-X-ACC-VEHCHGR	Vehicle powered adapter cable.
DETECTIVE-X-ACC-PS	Universal AC mains power supply.
DETECTIVE-X-ACC-2590-CABLE	Battery Cable for connection to Military 2590 battery.
DETECTIVE-X-ACC-RCFILTER	Low Energy Gamma Filter.
DETECTIVE-X-ACC-COL-W	Tungsten Collimator 4 mm thick.
DETECTIVE-X-ACC-COL-ST	Steel Collimator 4 mm thick.
DETECTIVE-X-ACC-TRANSPORTCASE	Wheeled Transport Case.
DETECTIVE-X-ACC-BLUETOOTH-HS	Bluetooth Headset.
DETECTIVE-X-ACC-USBFLASH	USB Mini Flash Drive.
DETECTIVE-X-ACC-WIFI-ADAPTER	WiFi 802.11 B/G/N USB Adapter
DETECTIVE-X-ACC-SHOULDER-STRAP	Shoulder Strap.
DETECTIVE-X-ACC-MANUAL	Manual
DETECTIVE-X-ACC-STYLUS	Stylus
DETECTIVE-X-ACC-RETRACTABLE-CORD	Retractable Cord for Stylus
DETECTIVE-X-NEUTRON-DETECTOR	$Li^9/ZnS$ Neutron Detector.
DETECTIVE-X-OPT-RFSECURE	Removal of WiFi, Bluetooth, and GPS signal capability from Detective X.
EXT-BAT-X	Ultra Battery Extender. Includes battery, charger and cable for Detective-X.
M-1-T2-X-VERT	Variable length tripod and mounting hardware for Detective-X
M-1-T2	Variable length tripod for Detective-X
M-1-T2-BRKT-X-VERT	Vertical mounting bracket for Detective-X on M-1-T2 tripod

**Detective-200 Ultra-High-Sensitivity, Ruggedized, Transportable HPGe Radioisotope Identification System**

Model	Description
DETDX-200	Ultra-High-Sensitivity, Ruggedized, Transportable HPGe Radioisotope Identifier (Gamma Only) with AC/DC power adapter charger, automobile power cable, external battery kit, wheeled transport case, and MAESTRO-PRO software.
DETDX-200-2	Includes 2 each DETDX-200 Ultra-High-Sensitivity, Ruggedized, Transportable HPGe Radioisotope Identifiers (Gamma Only) with AC/DC power adapter charger, automobile power cable, external battery kit, and wheeled transport case, and 1 each Detective-Remote software with Laptop computer, external GPS, and MAESTRO-PRO software.
DETDX-200-4	Includes 4 each DETDX-200 Ultra-High-Sensitivity, Ruggedized, Transportable HPGe Radioisotope Identifiers (Gamma Only) with AC/DC power adapter charger, automobile power cable, external battery kit, and wheeled transport case, and 1 each Detective-Remote software with Laptop computer, external GPS, and MAESTRO-PRO software.
DETEX-200	Ultra-High-Sensitivity, Ruggedized, Transportable HPGe Radioisotope Identifier (Gamma and Neutron) with AC/DC power adapter charger, automobile power cable, external battery kit, wheeled transport case, and MAESTRO-PRO software.
DETEX-200-2	Includes 2 each DETEX-200 Ultra-High-Sensitivity, Ruggedized, Transportable HPGe Radioisotope Identifiers (Gamma and Neutron) with AC/DC power adapter charger, automobile power cable, external battery kit, and wheeled transport case, and 1 each Detective-Remote software with Laptop computer, external GPS, and MAESTRO-PRO software.
DETEX-200-4	Includes 4 each DETEX-200 Ultra-High-Sensitivity, Ruggedized, Transportable HPGe Radioisotope Identifiers (Gamma and Neutron) with AC/DC power adapter charger, automobile power cable, external battery kit, and wheeled transport case, and 1 each Detective-Remote software with Laptop computer, external GPS, and MAESTRO-PRO software.
DETECTIVE-REMOTE-MOB-SYS	Detective-Remote software with Detective software update, Laptop computer, external GPS, and MAESTRO-PRO software.
EXT-BAT-D200	Ultra Battery Extender. Includes battery, charger, and cables for all Detective-200 models.

**RADEAGLET-R Rugged Radioisotope Identification Device (includes carrying case and accessories)**

Model	Description
RADEAGLET-R-2SG	Rugged Gamma Handheld RIID with 2x1 NaI(Tl) detector and GM tube.
RADEAGLET-R-2SG-E	Rugged Gamma Handheld RIID with 2x1 NaI(Tl) detector, GM tube and embedded source.
RADEAGLET-R-2SG-P	Rugged Gamma Handheld RIID with 2x1 NaI(Tl) detector, GM tube and GPS.
RADEAGLET-R-2SG-P-E	Rugged Gamma Handheld RIID with 2x1 NaI(Tl) detector, GM tube, GPS and embedded source.
RADEAGLET-R-2SG-N	Rugged Gamma/Neutron Handheld RIID with 2x1 NaI(Tl) detector, GM tube and Neutron detector.
RADEAGLET-R-2SG-N-E	Rugged Gamma/Neutron Handheld RIID with 2x1 NaI(Tl) detector, GM tube, Neutron detector and embedded source.
RADEAGLET-R-2SG-N-P	Rugged Gamma/Neutron Handheld RIID with 2x1 NaI(Tl) detector, GM tube, Neutron detector and GPS.
RADEAGLET-R-2SG-N-P-E	Rugged Gamma/Neutron Handheld RIID with 2x1 NaI(Tl) detector, GM tube, Neutron detector, GPS and embedded source.
RADEAGLET-R-1LG	Rugged Gamma Handheld RIID with 1x1 LaBr3(Ce) detector and GM tube.
RADEAGLET-R-1LG-P	Rugged Gamma Handheld RIID with 1x1 LaBr3(Ce) detector, GM tube and GPS.
RADEAGLET-R-1LG-N	Rugged Gamma Handheld RIID with 1x1 LaBr3(Ce) detector, GM tube and Neutron detector.
RADEAGLET-R-1LG-N-P	Rugged Gamma Handheld RIID with 1x1 LaBr3(Ce) detector, GM tube, Neutron detector and GPS.
RE-CA019	Auto Power Adapter, 12V
RTR-AP013-E	Accu pack without Batteries
RTR-AP013-L	Accu pack with Li-Ion Batteries
RTR-AP013-N	Accu pack with NiMH Batteries
RTR-BTDONGLE	Bluetooth Dongle
RTR-CC001	Carry Case
RTR-CC-FOAM	Foam Insert for Carry Case
RTR-CM-EU	Wall Plug/Charger Module - EU
RTR-CM-US	Wall Plug/Charger Module - US
RTR-CM-UK	Wall Plug/Charger Module - UK
RTR-HOLSTER	Carry Holster
RTR-HSBT	Head Set with Bluetooth Communication
RTR-IP-2AB	innoPROBE Alpha/Beta Detector
RTR-IP-2AB-HOUSING	innoPROBE Alpha/Beta Detector Housing
RTR-K40BOX	Calibration Source Box with potassium chloride (KCl). ICSC 1450.
RTR-MANUAL	Manual
RTR-SCREWDRIVER	Screwdriver for Accu Pack
RTR-TESTSHEET	Factory Test Sheet (specify Radeaglet-R Serial Number)
RTR-USB-MAGNETIC	USB Cable with Magnetic Connector
RTR-USB-STICK	USB Stick
RTR-WIFIDONGLE	WiFi Dongle
RTR-WS	Wrist Strap

**RADEAGLET Radioisotope Identification Device (includes carrying case and accessories)**

Model	Description
RADEAGLET-2SG-H	Gamma/Neutron Handheld RIID with 2x1 NaI(Tl) detector, GM tube and He-3 detector.
RADEAGLET-2SG-H-GPS	Gamma/Neutron Handheld RIID with 2x1 NaI(Tl) detector, GM tube, He-3 detector and GPS.
RADEAGLET-2SG-H-GPS-ES	Gamma/Neutron Handheld RIID with 2x1 NaI(Tl) detector, GM tube, He-3 detector, GPS and embedded source.



**RADEAGLE Radioisotope Identification Device** (includes carrying case and accessories)

Model	Description
RADEAGLE-3SG	Gamma Handheld RIID with 3x1 NaI(Tl) detector and GM tube.
RADEAGLE-3SG-ES	Gamma Handheld RIID with 3x1 NaI(Tl) detector, GM tube and embedded calibration source.
RADEAGLE-3SG-GPS	Gamma Handheld RIID with 3x1 NaI(Tl) detector, GM tube and GPS.
RADEAGLE-3SG-GPS-ES	Gamma Handheld RIID with 3x1 NaI(Tl) detector, GM tube, GPS and embedded calibration source.
RADEAGLE-3SG-H	Gamma/Neutron Handheld RIID with 3x1 NaI(Tl) detector, GM tube and He-3 detector.
RADEAGLE-3SG-H-ES	Gamma/Neutron Handheld RIID with 3x1 NaI(Tl) detector, GM tube, He-3 detector and embedded calibration source.
RADEAGLE-3SG-H-GPS	Gamma/Neutron Handheld RIID with 3x1 NaI(Tl) detector, GM tube, He-3 detector and GPS.
RADEAGLE-3SG-H-GPS-ES	Gamma/Neutron Handheld RIID with 3x1 NaI(Tl) detector, GM tube, He-3 detector, GPS and embedded calibration source.
RADEAGLE-3SGA	Gamma Handheld RIID with 3x1 NaI(Tl) detector, GM tube and underwater option.
RADEAGLE-3SGA-ES	Gamma Handheld RIID with 3x1 NaI(Tl) detector, GM tube, underwater option and embedded calibration source.
RADEAGLE-3SGA-GPS	Gamma Handheld RIID with 3x1 NaI(Tl) detector, GM tube, underwater option and GPS.
RADEAGLE-3SGA-GPS-ES	Gamma Handheld RIID with 3x1 NaI(Tl) detector, GM tube, underwater option, GPS and embedded calibration source.
RADEAGLE-3SGA-H	Gamma/Neutron Handheld RIID with 3x1 NaI(Tl) detector, GM tube, He-3 detector and underwater option.
RADEAGLE-3SGA-H-ES	Gamma/Neutron Handheld RIID with 3x1 NaI(Tl) detector, GM tube, He-3 detector, underwater option and embedded calibration source.
RADEAGLE-3SGA-H-GPS	Gamma/Neutron Handheld RIID with 3x1 NaI(Tl) detector, GM tube, He-3 detector, underwater option and GPS.
RADEAGLE-3SGA-H-GPS-ES	Gamma/Neutron Handheld RIID with 3x1 NaI(Tl) detector, GM tube, He-3 detector, underwater option, GPS and embedded calibration source.
RADEAGLE-2CG	Gamma Handheld RIID with 2x1 CeBr3 detector and GM tube.
RADEAGLE-2CG-ES	Gamma Handheld RIID with 2x1 CeBr3 detector, GM tube and embedded calibration source.
RADEAGLE-2CG-GPS	Gamma Handheld RIID with 2x1 CeBr3 detector, GM tube and GPS.
RADEAGLE-2CG-GPS-ES	Gamma Handheld RIID with 2x1 CeBr3 detector, GM tube, GPS and embedded calibration source.
RADEAGLE-2CG-H	Gamma/Neutron Handheld RIID with 2x1 CeBr3 detector, GM tube and He-3 detector.
RADEAGLE-2CG-H-ES	Gamma/Neutron Handheld RIID with 2x1 CeBr3 detector, GM tube, He-3 detector and embedded calibration source.
RADEAGLE-2CG-H-GPS	Gamma/Neutron Handheld RIID with 2x1 CeBr3 detector, GM tube, He-3 detector and GPS.
RADEAGLE-2CG-H-GPS-ES	Gamma/Neutron Handheld RIID with 2x1 CeBr3 detector, GM tube, He-3 detector, GPS and embedded calibration source.
RADEAGLE-3CG	Gamma Handheld RIID with 3x0.8 CeBr3 detector and GM tube.
RADEAGLE-3CG-ES	Gamma Handheld RIID with 3x0.8 CeBr3 detector, GM tube and embedded calibration source.
RADEAGLE-3CG-GPS	Gamma Handheld RIID with 3x0.8 CeBr3 detector, GM tube and GPS.
RADEAGLE-3CG-GPS-ES	Gamma Handheld RIID with 3x0.8 CeBr3 detector, GM tube, GPS and embedded calibration source.
RADEAGLE-3CG-H	Gamma/Neutron Handheld RIID with 3x0.8 CeBr3 detector, GM tube and He-3 detector.
RADEAGLE-3CG-H-ES	Gamma/Neutron Handheld RIID with 3x0.8 CeBr3 detector, GM tube, He-3 detector and embedded calibration source.
RADEAGLE-3CG-H-GPS	Gamma/Neutron Handheld RIID with 3x0.8 CeBr3 detector, GM tube, He-3 detector and GPS.
RADEAGLE-3CG-H-GPS-ES	Gamma/Neutron Handheld RIID with 3x0.8 CeBr3 detector, GM tube, He-3 detector, GPS and embedded calibration source.
RADEAGLE-2LG	Gamma Handheld RIID with 2x1 LaBr3(Ce) detector and GM tube.
RADEAGLE-2LG-GPS	Gamma Handheld RIID with 2x1 LaBr3(Ce) detector, GM tube and GPS.
RADEAGLE-2LG-H	Gamma/Neutron Handheld RIID with 2x1 LaBr3(Ce) detector, GM tube and He-3 detector.
RADEAGLE-2LG-H-GPS	Gamma/Neutron Handheld RIID with 2x1 LaBr3(Ce) detector, GM tube, He-3 detector and GPS.
RE-AP009-1	Accu-Pack Battery Charger with battery (spare)
RE-AP009-2	Accu-Pack Battery Charger Only.
RE-CA019	Auto Power Adapter, 12V
RE-CC022	Carry Case
RE-CM020	DC Power Adapter/Charger
RE-HB021	Carrying Holster with Strap

**Trans-SPEC-DX-100T Portable Spectrometers**

Model	Description
TRANS-SPEC-DX-100T	Portable Integrated HPGe Spectrometer System. Includes docking station, universal mains supply, automobile power cables, shoulder strap, and MAESTRO software.
TSP-DX-100T-PKG-1	Includes TRANS-SPEC-DX-100T Portable Integrated HPGe Spectrometer System, docking station, universal mains supply, automobile power cables, shoulder strap, MAESTRO software and large wheeled transport case.
TSP-DX-100T-PAC	Portable Integrated HPGe Spectrometer System. Includes ac/dc power adapter/charger (PAC), automobile power cables, shoulder strap, and MAESTRO software.
TSP-DX-100T-PAC-PKG-1	Includes TSP-DX-100T-PAC Portable Integrated HPGe Spectrometer System, ac/dc power adapter/charger, automobile power cables, shoulder strap, MAESTRO software and compact wheeled transport case.
TSP-OPT-3	Automobile Power Adapter to Docking Station (4-pin)
TSP-OPT-4	Docking Station AC Power Supply (8-pin)
TSP-OPT-4B	Docking Station AC Power Supply (4-pin)
TSP-OPT-7	Replacement Battery
TSP-OPT-8	Shoulder Strap
TSP-OPT-11	Automobile Power Adapter to Instrument or AC/DC Power Adapter/Charger
TSP-OPT-12	AC/DC Power Adapter/Charger (PAC-II)
TSP-OPT-16	Docking Station II with AC Power Supply
TSP-100-COL-ST	Steel Collimator, 4 mm thick
TSP-100-COL-W	Tungsten Collimator, 4 mm thick
TSP-ISO-SHLD-3	Lead Shield, 3" long x 2" thick. Provides 0.5" collimation.
TSP-ISO-SHLD-2	Lead Shield, 2" long x 2" thick. For additional collimation with TSP-ISO-SHLD-3.
TSP-ISO-DCC	Carrier slide/plate and mounting adapter screws and bar for trans-SPEC-DX-100T and TSP-ISO-SHLD.
DETECTIVE-EX-OPT-2	Large Wheeled Transport Case with space for Docking Station
DETECTIVE-EX-OPT-3	Compact Wheeled Transport Case with space for AC/DC Power Adapter/Charger
DETECTIVE-OPT-11	Universal Protective Plastic Cover. Pkg. of 5.
DET-100-OPT-17	PSC TechniCART. Includes ISO-DCC carrier slide/plate and ISO-ADAPT-100.
DET-100-OPT-18	Low Energy Gamma Ray Filter
EXT-BAT-100T	Ultra Battery Extender. Includes battery, charger and cable for Detective-100T or Trans-SPEC-100T
931521	Spare Battery for EXT-BAT models
M-1-T2-100-VERT	Variable length tripod and mounting hardware for Detective and trans-SPEC 100 models.
M-1-T2	Variable length tripod for Detective and trans-SPEC 100 models
M-1-T2-BRKT-100-VERT	Vertical mounting bracket for Detective and trans-SPEC 100 models on M-1-T2 tripod

**Micro-trans-SPEC Lightweight Portable Spectrometers**

Model	Description
MICRO-TRANS-SPEC	Portable Integrated HPGe Spectrometer System. Includes mains adapter, battery cable, shoulder strap, soft side carry case, and MAESTRO software.
MICRO-TSP-PKG-1	Includes Micro-trans-SPEC Portable Integrated HPGe Spectrometer System, mains adapter, battery cable, shoulder strap, MAESTRO software and hard side wheeled transport case.
MICRO-UF6-PKG-1	Micro-trans-SPEC based portable UF6 Cylinder verification system. Includes customized Micro-trans-SPEC with reinforced structural frame, removable graded tungsten collimator and case, wheeled waterproof transport case, and UF6 software.
MICRO-UF6-STFC-PKG-1	Micro-trans-SPEC based portable UF6 Cylinder verification system. Includes customized Micro-trans-SPEC with reinforced structural frame and a Stable, Thin Front Contact on the detector, removable graded tungsten collimator and case, wheeled waterproof transport case, and UF6 software.
MICRO-DET-ACC-BAT	Lithium-Ion Battery.
MICRO-DET-ACC-BAT-DOR	Snap-Open Battery Door Upgrade Kit
MICRO-DET-ACC-BAT-UPG	Snap-Open Battery Door and Longer-Life SMART Battery Upgrade Kit for Micro-Detective and Micro-trans-SPEC models.
MICRO-DET-ACC-BAT-CHGR-UPG	Snap-Open Battery Door and Longer-Life SMART Battery Upgrade Kit with standard battery charger
MICRO-DET-ACC-CHGR	Standalone battery charger and calibrator kit.
MICRO-DET-ACC-SIXCHGR	6-Bay battery charger.
MICRO-DET-ACC-VEHCHGR	Vehicle powered battery charger.
MICRO-DET-ACC-PS	Universal AC mains power supply.
MICRO-DET-COL-ST	Steel Collimator.
MICRO-DET-COL-W	Tungsten Collimator.
MICRO-DET-OPT-1	Rugged, waterproof, wheeled transport case.
MICRO-DET-OPT-18	Low Energy Gamma Ray Filter
EXT-BAT-MICRO	Ultra Battery Extender. Includes battery, charger and cable for Micro-Detective and Micro-Trans-SPEC
931521	Spare Battery for EXT-BAT models
931286	Vehicle Power Supply Cable
M-1-T2-MICRO-VERT	Variable length tripod and mounting hardware for Micro-Detective and Micro-trans-SPEC models.
M-1-T2	Variable length tripod for Micro-Detective and Micro-trans-SPEC models
M-1-T2-BRKT-MICRO-VERT	Vertical mounting bracket for Micro-Detective and Micro-trans-SPEC models on M-1-T2 tripod

**Detective-X-TS Portable Spectrometer**

- See page 36 for accessories.

Model	Description
DETECTIVE-X-TS	Ultra-Light-Weight, Portable, High Efficiency, Standard HPGe Spectrometer. Includes mains adapter, vehicle power cable, USB flash drive, shoulder strap, MAESTRO-PRO software and wheeled hardsided case. <b>Does not include</b> Radioisotopic Identification applications (Detective X, Sleuth, and RAPID)

**DigiDART Portable MCA**

- Contact factory for use with -PL option detector.

Model	Description
DIGIDART	DIGIDART with MAESTRO Software, 2 cables, battery and charger, operator manual, instruction card and USB Driver instruction sheet. NO DIM, for use with SMART-1 detector.
DIGIDART-POSGE	DIGIDART with DIM-POSGE detector interface module for non-SMART positive bias HPGe detector.
DIGIDART-NEGGE	DIGIDART with DIM-NEGGE detector interface module for non-SMART negative bias HPGe detector.
DIGIDART-POSNAI	DIGIDART with DIM-POSNAI detector interface module for positive bias NaI detector.
DIGIDART-296	DIGIDART with DIM-296 detector interface module for NaI detector.
DIGIDART-PKG-1	DIGIDART with GammaVision Software. NO DIM, for use with SMART-1 detector.
DIGIDART-PKG-8	DIGIDART with ISOTOPIC Software. NO DIM, for use with SMART-1 detector.
DIGIDART-R	DIGIDART with RS-232-C communications. NO DIM, for use with SMART-1 detector.
DIGIDART-R-POSNAI	DIGIDART with detector interface module for positive bias NaI detector with RS-232-C communications.
DIGIDART-32	32k channel DigiDART with MAESTRO Software, NO DIM, for use with SMART-1 detector.
DIGIDART-32-POSGE	DIGIDART-32 with DIM-POSGE detector interface module for non-SMART positive bias HPGe detector.
DIGIDART-32-296	DIGIDART-32 with DIM-296 detector interface module for NaI detector.
DIGIDART-OPT1	Spare high capacity battery.
DIGIDART-OPT2	Battery charger 110–240 V 50/60 Hz.
DIGIDART-OPT2-E	Battery charger 110–40 V 50/60 Hz, CE approved for Europe.
DIGIDART-OPT3	Field Kit: carry strap/belt strap, auto adapter, universal mains adaptor, spare battery.
DIGIDART-OPT5	Cable to connect DigiDART to Radiant 200 (10 ft. length).
DIGIDART-OPT6	Fanout cable for use with detectors not including a DIM. Provides analog and gate input. Requires conventional preamp output pulse.

**DigiDART-LF Portable MCA**

- Contact factory for use with -PL option detector.

Model	Description
DIGIDART-LF	DigiDART-LF Portable "SMART" MCA for NaI(Tl), LaBr and other Scintillation Detectors
DD-LF-POSNAI	DigiDART-LF with DIM-POSNAI detector interface module for positive bias NaI detector
DD-LF-296	DigiDART-LF with DIM-296 detector interface module for NaI or LaBr detector
DD-LF-2BY2	DigiDART-LF with rugged, integrated 2" x 2" NaI detector/DIM-296 assembly and carry case. <b>NON ROHS.</b>
DD-LF-3BY3	DigiDART-LF with rugged, integrated 3" x 3" NaI detector/DIM-296 assembly and carry case. <b>NON ROHS.</b>

**DSPEC 50/502 and DSPEC 50A/502A Digital Signal Processing Based Gamma-Ray Spectrometers**

- Detector connection cables not included.

Model	Description
DSPEC-50	DSPEC 50 with MAESTRO Software, single MCA, and single internal High Voltage Power Supply
DSPEC-502	DSPEC 502 with MAESTRO Software, two MCAs, and two internal High Voltage Power Supplies
DSPEC-50A	DSPEC 50 (Advanced) with MAESTRO-Pro Software, single MCA, and single internal High Voltage Power Supply
DSPEC-502A	DSPEC 502 (Advanced) with MAESTRO-Pro Software, two MCAs, and two internal High Voltage Power Supplies
931431	Detector Interface Module (DIM) cable, 4-ft length
683410	Detector Interface Module (DIM) cable, 10-ft length
DIM-CABLE-X-S	Detector Interface Module (DIM) cable; X=length, ft

**DSPEC Pro Digital Signal Processing Based Gamma-Ray Spectrometer**

- Contact factory for use with -PL option detector.

Model	Description
DSPEC-PRO	DSPEC Pro with MAESTRO. No DIM, for use with SMART-1 equipped detector.
DSPEC-PRO-MOD1	DSPEC Pro with "Always-On" feature and MAESTRO. No DIM, for use with SMART-1 equipped detector.
DSPEC-PRO-POSGE	DSPEC Pro with MAESTRO and DIM-POSGE for use with NON-SMART-1 detector.
DSPEC-PRO-POSGE-MOD1	DSPEC Pro with "Always-On" feature, MAESTRO and DIM-POSGE for use with NON-SMART-1 detector.
DSPEC-PRO-NEGGE	DSPEC Pro with MAESTRO and DIM-NEGGE for use with NON-SMART-1 detector.
DSPEC-PRO-POSNAI	DSPEC Pro with MAESTRO and DIM-POSNAI for use with NaI detector
DSPEC-PRO-296	DSPEC Pro with MAESTRO and DIM-296 for use with NaI detector
DSPEC-PRO-PKG-1	DSPEC Pro. with MAESTRO and GammaVision software. No DIM, for use with SMART-1 equipped detector.
DSPEC-PRO-PTK	DSPEC Pro with MAESTRO and A11 Programmer's Toolkit software. No DIM, for use with SMART-1 equipped detector.
DSPEC-PRO-CH	DSPEC Pro ONLY. No Software.

**DSPEC jr 2.0 Digital Signal Processing Based Gamma-Ray Spectrometer**

- Contact factory for use with -PL option detector.

Model	Description
DSPEC-jr-2.0	DSPEC jr 2.0 with MAESTRO, No DIM, for use with SMART-1 equipped detector.
DSPEC-jr-2.0-POSGE	DSPEC jr 2.0 with MAESTRO and DIM-POSGE for use with Non-SMART-1 detector.
DSPEC-jr-2.0-NEGGE	DSPEC jr 2.0 with MAESTRO and DIM-NEGGE for use with Non-SMART-1 detector.
DSPEC-jr-2.0-POSNAI	DSPEC jr 2.0 with MAESTRO and DIM-POSNAI, for use with NaI detector.
DSPEC-jr-2.0-296	DSPEC jr 2.0 with MAESTRO and DIM-296, for use with NaI detector.
DSPEC-jr-2.0-PKG-1	DSPEC jr 2.0 with MAESTRO and GammaVision, No DIM, for use with SMART-1 equipped detector.

**DSPEC-LF Digital Signal Processing Based Gamma-Ray Spectrometer**

- Contact factory for use with -PL option detector.

Model	Description
DSPEC-LF	DSPEC-LF with MAESTRO, No DIM, for use with SMART-1 equipped detector.
DSPEC-LF-POSGE	DSPEC-LF with MAESTRO and DIM-POSGE for use with Non-SMART-1 detector.
DSPEC-LF-NEGGE	DSPEC-LF with MAESTRO and DIM-NEGGE for use with Non-SMART-1 detector.
DSPEC-LF-POSNAI	DSPEC-LF with MAESTRO and DIM-POSNAI, for use with NaI detector.
DSPEC-LF-296	DSPEC-LF with MAESTRO and DIM-296, for use with NaI detector.
DSPEC-LF-PKG-1	DSPEC-LF with MAESTRO and GammaVision, No DIM, for use with SMART-1 equipped detector.

**IDM Interchangeable Detector Module**

Model	Description
IDM-200-P	IDM-200-P Interchangeable Detector Module for Portal Monitoring Applications. Includes internal backup battery and operating manual.
IDM-200-V	IDM-200-V Interchangeable Detector Module for System Integrators. Includes AC/DC power adaptor, IP68 USB cable, internal back up battery operating manual and MAESTRO software.
IDM-200-ACC-PS	AC/DC Power Adapter Charger.
IDM-200-ACC-USB	IP68 USB Cable.
EXT-BAT-IDM	Ultra Battery Extender. Includes battery, charger and cable for IDM models.

**ACE Mate Amplifier and Bias Supply**

Model	Description
925-SCINT	ACE Mate Preamp/Amp/Bias Supply with Built-in Ratemeter and SCA

**NaI Spectrometers**

Model	Description
digiBASE	14-Pin PMT Base for NaI Applications. Complete with Digital MCA, Preamplifier, High Voltage Supply, and MAESTRO Software. USB Connection.
digiBASE-CH	DigiBASE with USB connection only. NO software.
digiBASE-PKG-1	DigiBASE with A66SV-BW Software
digiBASE-E	High Performance 14-Pin PMT Base for Scintillation Detectors. Complete with Digital MCA, Preamplifier, High Voltage Supply, and MAESTRO Software. PoE Ethernet Connection.
digiBASE-E-PKG-1	DigiBASE-E with A66SV-BW Software

**Monitoring Systems**

Model	Description
EL910	2" diameter Particulate Filter Paper Holder

**Whole-Body Counters**

Model	Description
StandFASTII-PC	Stand-Up Whole-Body Counter. Includes shield, two 4x4x16 inch NaI detectors, electronics, computer, and software.
StandFASTII-NOPC	Stand-Up Whole-Body Counter. Includes shield, two 4x4x16 inch NaI detectors, electronics, and software.
WBC-200-PC	Chair Body Counter. Includes shield, one 5x4 inch NaI detector, electronics, computer, and software.
WBC-200-NOPC	Chair Body Counter. Includes shield, one 5x4 inch NaI detector, electronics, and software.
WBC-200-2-PC	Chair Body Counter. Includes shield, two 5x4 inch NaI detector, electronics, computer, and software.
WBC-200-2-NOPC	Chair Body Counter. Includes shield, two 5x4 inch NaI detector, electronics, and software.
WBC-200-DS8530	High Resolution HPGe Based Chair. Includes two detectors and LN2 free cooling.
WBC-BSCAN	High Resolution HPGe Based Scanning Bed. Includes one detector and LN2 free cooling.
WBC-T	NaI Based Counter Top Thyroid Screening System. Includes one detector.
WBC-LB-2	High Resolution HPGe Based Lung Burden Analysis System. Includes two detectors.
WBC-LB-4	High Resolution HPGe Based Lung Burden Analysis System. Includes four detectors.
Phantom	Whole-Body Counter Phantom. Polyethylene constructed to model the 95% man.
Phantom Stand	Stand for Phantom in StandFASTII configuration.
Sources (U.S.A. only)	Based on type of counter (HPGe or NaI) and energy range of interest.

**GammaScreen-8 8-Channel Rapid Analysis of Multiple Gamma Emitting Radionuclides in Clinical Samples**

Model	Description
GammaScreen-8	Complete 8 detector system including all detectors, electronics, PC hardware and software. (Sample containers not included but supplied at extra cost if required.)

**FoodGuard-1 NaI-based Food Monitoring System**

- NaI detectors are not CE or ROHS compliant and must be ordered as a Special if compliance is required.

Model	Description
FOODGUARD-1	A complete NaI-based food monitoring system including 905-4 NaI detector, G5-FOODGUARD-1 lead shield, digiBASE MCA, FoodGuard-1 software, Marinelli beakers (6), 40K (KCl) ring source, and Marinelli beaker calibration check source (~2 kg of KCl). <b>NON ROHS.</b>
FOODGUARD-1-CART	A complete NaI-based food monitoring system including 905-4 NaI detector, G5-FOODGUARD-1 lead shield, FGCART transport cart, digiBASE MCA, FoodGuard-1 software, Marinelli beakers (6), 40K (KCl) ring source, and Marinelli beaker calibration check source (~2 kg of KCl). <b>NON ROHS.</b>
FOODGUARD-1-PC	A complete NaI-based food monitoring system including 905-4 NaI detector, G5-FOODGUARD-1 lead shield, digiBASE MCA, FoodGuard-1 software, Marinelli beakers (6), 40K (KCl) ring source, Marinelli beaker calibration check source (~2 kg of KCl), laptop, and laser printer. <b>NON ROHS.</b>
FOODGUARD-1-PC-CART	A complete NaI-based food monitoring system including 905-4 NaI detector, G5-FOODGUARD-1 lead shield, FGCART transport cart, digiBASE MCA, FoodGuard-1 software, Marinelli beakers (6), 40K (KCl) ring source, Marinelli beaker calibration check source (~2 kg of KCl), laptop, and laser printer. <b>NON ROHS.</b>
FG-1-MARINELLI-CASE	Case (33) of 1L Marinelli Beakers for FoodGuard-1 system.
FGCART	Transport Cart. Securely carries the shielded detector and provides a convenient shelf mount for the system laptop computer.

**FoodGuard-2 HPGe-based Food Monitoring System**

Model	Description
FOODGUARD-2-AK	FoodGuard-2 Add-On Kit comprising: FoodGuard-2 Software, Connections Software upgrade, 6 each 2-liter Marinelli beakers and 40K check standard.

## Alpha/Beta and Alpha Counters

- ORT- models may be sold in any country.
- PIC- models may not be sold in Bahrain, Bangladesh, Brunei, Egypt, India, Indonesia, Iraq, Jordan, Kuwait, Libya, Malaysia, Qatar, Saudi Arabia, Singapore, Oman, Tunisia, Turkey, U.A.E., and Vietnam.

Model	Description
ORT-ASC-950-DP	Automatic Swipe Counter with Dual Scintillator Detector. Color Touch Screen Interface, USB Data Export/Import. (No P-10 Gas Required).
ORT-ASC-950-DP-G	Automatic Swipe Counter with Dual Scintillator Detector and Cosmic Guard. Color Touch Screen Interface, USB Data Export/Import. (No P-10 Gas Required).
ORT-ASC-950-OPT-04	Expanded 100 Sample Capacity Stack for ASC only.
ORT-ASC-950-OPT-05	Extra Left 50 Sample Stack Stand and 50 Sample Carriers (51–100).
ORT-ASC-950-OPT-06	Extra Left 100 Sample Stack Stand and 100 Sample Carriers (51–150).
ORT-ASC-950-SHLD	2 inch Lead Shield.
ORT-ASC-950-VISTA-FC	Vista FC Health Physics Application and Control Software for ASC-950.
ORT-MDS-CTRL	MDS Control Pack. Includes Vista 2000 software, RS232/485 interface, null modem cable, and gas regulator.
ORT-MDS-RACK	Support Rack for two MPC-9604 Subsystems.
ORT-MPC-900-DP	Desktop Gross Alpha/Beta Counter-Dual Scintillator Detector. Color Touch Screen Interface, USB Data Export/Import. No P-10 gas required.
ORT-MPC-900-DP-G	Desktop Gross Alpha/Beta Counter-Dual Scintillator Detector and Cosmic Guard. Color Touch Screen Interface, USB Data Export/Import. No P-10 gas required.
ORT-MPC-900-GFL-2	Desktop Gross Alpha/Beta Counter-Windowless Gas Flow Detector. Color Touch Screen Interface, USB Data Export/Import.
ORT-MPC-900-GFW-2	Desktop Gross Alpha/Beta Counter-Windowed Gas Flow Detector. Color Touch Screen Interface, USB Data Export/Import.
ORT-MPC-900-SHLD	2 inch Lead Shield.
ORT-MPC-1000-GFL-2	Manual Alpha/Beta Counting Instrument 2" Diameter Windowless/Window Hemispherical Gas-Flow Detector, 4" Lead Shield. Color Touch Screen Interface, USB Data Export/Import. Shipped Configured in Windowless Mode.
ORT-MPC-1000-GFW-2	Manual Alpha/Beta Counting Instrument 2" Diameter Window/Windowless Hemispherical Gas-Flow Detector, 4" Lead Shield. Color Touch Screen Interface, USB Data Export/Import. Shipped Configured in Windowed Mode.
ORT-MPC 9604	Four Detector Alpha/Beta Counting Unit Subsystem to expand an existing MDS System.
ORT-VISTA 2000	Counting System Control Software for Radiochemistry Applications.
ORT-VISTA-REPORT	Report Editor for Vista FC and Vista 2000 Application Software.
ORT-WPC-1050-GFW-2	Automatic 2 inch ultra low level Alpha/Beta System with thin window gas flow detector, 50 sample capacity , 50 sample carriers and planchet inserts. Note: 1 inch sample version also available. Color Touch Screen Interface, USB Data Export/Import.
ORT-WPC-1050-OPT-04	Expanded 100 Sample Capacity Option For WPC-1050 Only.
ORT-WPC-1050-OPT-05	Extra Left 50 Sample Stack and Support Stand with 50 Sample Carriers (51–100).
ORT-WPC-1050-OPT-06	Extra Left 100 Sample Stack and Support Stand with 100 Sample Carriers (51–150).
ORT-WPC-1050-Vista-FC	Vista FC Health Physics Application and Control for WPC-1050.
ORT-WPC-1150-GFW-3	Automatic Low-Level Alpha/Beta Counting Instrument with 5" Sample Changer with 3.5 Inch Diameter Windowed GFPC. Color Touch Screen Interface, USB Data Export/Import.
ORT-WPC-1150-GFW-5	Automatic Low-Level Alpha/Beta Counting Instrument with 5" Sample Changer with 5 Inch Diameter Windowed GFPC. Color Touch Screen Interface, USB Data Export/Import.
ORT-WPC-1150-VISTA-FC	Vista FC Health Physics Application and Control for WPC-1150.
PIC-ASC-950-DP	Automatic Swipe Counter with Dual Scintillator Detector. Color Touch Screen Interface, USB Data Export/Import. (No P-10 Gas Required)
PIC-ASC-950-OPT-04	Expanded 100 Sample Capacity Stack for ASC only.
PIC-ASC-950-OPT-05	Extra Left 50 Sample Stack Stand and 50 Sample Carriers (51–100).
PIC-ASC-950-OPT-06	Extra Left 100 Sample Stack Stand and 100 Sample Carriers (51–150).
PIC-ASC-950-SHLD	2 inch Lead Shield.
PIC-ASC-950-VISTA-FC	Vista FC Health Physics Application and Control Software for ASC-950.
PIC-MDS-CTRL	MDS Control Pack. Includes Vista 2000 software, RS232/485 interface, null modem cable, and gas regulator.
PIC-MDS-RACK	Support Rack for two MPC-9604 Subsystems.
PIC-MPC-900-DP	Desktop Gross Alpha/Beta Counter-Dual Scintillator Detector. Color Touch Screen Interface, USB Data Export/Import. No P-10 gas required.
PIC-MPC-900-GFL-2	Desktop Gross Alpha/Beta Counter-Windowless Gas Flow Detector. Color Touch Screen Interface, USB Data Export/Import.
PIC-MPC-900-GFW-2	Desktop Gross Alpha/Beta Counter-Windowed Gas Flow Detector. Color Touch Screen Interface, USB Data Export/Import.
PIC-MPC-900-SHLD	2 inch Lead Shield.
PIC-MPC-1000-GFL-2	Manual Alpha/Beta Counting Instrument 2" Diameter Windowless/Window Hemispherical Gas-Flow Detector, 4" Lead Shield. Color Touch Screen Interface, USB Data Export/Import. Shipped Configured in Windowless Mode.
PIC-MPC-1000-GFW-2	Manual Alpha/Beta Counting Instrument 2" Diameter Window/Windowless Hemispherical Gas-Flow Detector, 4" Lead Shield. Color Touch Screen Interface, USB Data Export/Import. Shipped Configured in Windowed Mode.
PIC-MPC-9604	Four Detector Alpha/Beta Counting Unit Subsystem to expand an existing MDS System.
PIC-VISTA-2000	Counting System Control Software for Radiochemistry Applications.
PIC-VISTA-FC	VISTA-FC Health Physics Software Application
PIC-VISTA-REPORT	Report Editor for Vista FC and Vista 2000 Application Software.
PIC-WPC-1050-GFW-2	Automatic 2 inch ultra low level Alpha/Beta System with thin window gas flow detector, 50 sample capacity , 50 sample carriers and planchet inserts. Note: 1 inch sample version also available. Color Touch Screen Interface, USB Data Export/Import.
PIC-WPC-1050-OPT-04	Expanded 100 Sample Capacity Option For WPC-1050 Only.
PIC-WPC-1050-OPT-05	Extra Left 50 Sample Stack and Support Stand with 50 Sample Carriers (51–100).

**Alpha/Beta and Alpha Counters – continued**

Model	Description
PIC-WPC-1050-OPT-06	Extra Left 100 Sample Stack and Support Stand with 100 Sample Carriers (51–150).
PIC-WPC-1050-Vista-FC	Vista FC Health Physics Application and Control for WPC-1050.
PIC-WPC-1150-GFW-3	Automatic Low-Level Alpha/Beta Counting Instrument with 5" Sample Changer with 3.5 Inch Diameter Windowed GFPC. Color Touch Screen Interface, USB Data Export/Import.
PIC-WPC-1150-GFW-5	Automatic Low-Level Alpha/Beta Counting Instrument with 5" Sample Changer with 5 Inch Diameter Windowed GFPC. Color Touch Screen Interface, USB Data Export/Import.
PIC-WPC-1150-VISTA-FC	Vista FC Health Physics Application and Control for WPC-1150.
PIC-110-1002	7.5" Cosmic Guard Detector
PIC-110-1029	2.25" Pancake Detector
PIC-110-1073	Scintillation Guard Detector
PIC-120-0006	Replacement Anode for 2 1/4" Windowless Detectors
PIC-120-0007	Windowless Gasket Set, includes 1 each carrier arm seal, carrier arm window, hemi detector top seal, and 2.25 in. windowless seal
PIC-120-0008	Ultra-thin (80microgram/cm2) detector window for all 2 1/4" gas flow and DP detectors
PIC-120-0010-ASC	DP Shield Assembly for ASC-950-DP
PIC-120-0010-DP	DP Shield Assembly for ASC-950-DP
PIC-120-0011	Mobile Cart with Slide Drawer
PIC-120-0023	5" Diameter 80 ugm/cm2 Window
PIC-120-0033	Carrier Set 1-50+QC+Group
PIC-120-0033-ASC	ASC Carrier Set 1-50+QC+Group
PIC-120-0034	Carrier Set Any Sequence
PIC-120-0034-ASC	ASC Carrier Set Any Sequence
PIC-120-0036-ASC	100 Sample Option for ASC-950
PIC-120-0037	Window Gasket, set of 3
PIC-120-0064	3.5" Diameter 80 ugm/cm2 Window
PIC-120-0075-ASC-50	ASC 50 Sample Stack, Stand and Carrier Set
PIC-120-0075-ASC-100	ASC 100 Sample Stack, Stand and Carrier Set
PIC-120-0084	MPC-900 Guard Option
PIC-140-0045	1' Source Centering Ring
PIC-140-0045-1.25	1.25" Source Centering Ring
PIC-140-0045-0.787	0.787" Source Centering Ring
PIC-140-0115SS-1/8	1/8" Stainless Steel Sample Holder for IPC-950/MPC-1000
PIC-140-0115SS-1/4	1/4" Stainless Steel Sample Holder for IPC-950/MPC-1000
PIC-140-0115SS-5/16	5/16" Stainless Steel Sample Holder for IPC-950/MPC-1000
PIC-140-0278-1/8	1/8" Sample Holder for MPC-2000/900
PIC-140-0278-1/4	1/4" Sample Holder for MPC-2000/900
PIC-140-0278-5/16	5/16" Sample Holder for MPC-2000/900
PIC-140-0305-01	1/8" Planchet Holders (set of 50)
PIC-140-0305-02	1/4" Planchet Holders (set of 50)
PIC-140-0305-03	5/16" Planchet Holders (set of 50)
PIC-700-0007	2 x 1/8" SS Planchets (Set of 100)
PIC-700-0008	2 x 1/4" SS Planchets (Set of 100)
PIC-700-0009	2 x 5/16" SS Planchets (Set of 100)

**PINS Portable Isotopic Neutron-Spectroscopy Chemical Assay System**

Model	Description
PINS3-CF	Portable Chemical and Explosives Identification System. Includes trans-SPEC-N HPGe Gamma Spectrometer, Laptop, PINS Chemical and Explosives Analysis and Identification Software, measurement table assembly, safety signs and tools, external DC power supply, and ruggedized, wheeled transport and shipping container. NEUTRON SOURCE NOT INCLUDED.
PINS3-CF-RN	Portable Chemical and Explosives Identification System. Includes trans-SPEC-N HPGe Gamma Spectrometer, Laptop, PINS Chemical and Explosives Analysis and Identification Software, Radiological and Nuclear Identification Software, measurement table assembly, safety signs and tools, external DC power supply, and ruggedized, wheeled transport and shipping container. NEUTRON SOURCE NOT INCLUDED.
PINS3-CW-G2	Portable Chemical Identification System. Includes miniGen Neutron Generator, trans-SPEC-N HPGe Gamma Spectrometer, Laptop, PINS Chemical Analysis and Identification Software, measurement table assembly, safety signs and tools, external DC power supply, and ruggedized, wheeled transport/shipping containers.
PINS3-CW-G2-RN	Portable Chemical Identification System. Includes miniGen Neutron Generator, trans-SPEC-N HPGe Gamma Spectrometer, Laptop, PINS Chemical Analysis and Identification Software, measurement table assembly, safety signs and tools, external DC power supply, and ruggedized, wheeled transport/shipping containers and Radiological and Nuclear Identification Software.
TRANS-SPEC-N	Portable Spectrometer. Includes universal mains supply and MAESTRO software.
SIMULANTS-12	Calibration and Training Simulants. Qty 1 EA: CG, HE (Comp. B), HE (HMX), PoP, FS, GB, HC, HD, WP, L, VX, and Sand. Includes HazCom labels and 3 shipping drums.
PINS3-SW-UPG	PINS3 Software Upgrade to Latest Version. Requires previous purchase of PINS3 System and ITAR approval. Software will be delivered via AMEFEX Secure File Transfer. Includes MAESTRO software.

**GRACE Gamma Ray Analysis of Chemical Elements**

Model	Description
GRACE-CB-L	GRACE Chemical Element Analysis System. Includes Trans-SPEC-X-N HPGe Gamma Spectrometer, Mini-Gen Neutron Generator, INL Analysis Software, Tablet Computer, Measurement Table Assembly, Portable Power Supply, AC/DC Power Cables, Backpacks with Coyote Brown Cover, Frame (Size L), and Transport Cases.
GRACE-CB-XL	GRACE Chemical Element Analysis System. Includes Trans-SPEC-X-N HPGe Gamma Spectrometer, Mini-Gen Neutron Generator, INL Analysis Software, Tablet Computer, Measurement Table Assembly, Portable Power Supply, AC/DC Power Cables, Backpacks with Coyote Brown Cover, Frame (Size XL), and Transport Cases.
GRACE-MC-L	GRACE Chemical Element Analysis System. Includes Trans-SPEC-X-N HPGe Gamma Spectrometer, Mini-Gen Neutron Generator, INL Analysis Software, Tablet Computer, Measurement Table Assembly, Portable Power Supply, AC/DC Power Cables, Backpacks with Multicam Cover, Frame Size (L), and Transport Cases.
GRACE-MC-XL	GRACE Chemical Element Analysis System. Includes Trans-SPEC-X-N HPGe Gamma Spectrometer, Mini-Gen Neutron Generator, INL Analysis Software, Tablet Computer, Measurement Table Assembly, Portable Power Supply, AC/DC Power Cables, Backpacks with Multicam Cover, Frame Size (XL), and Transport Cases.
GR-RAD-NUKE-SW	Addition of Radiological and Nuclear Identification Software. Can only be ordered at time of GRACE System order.
GR-COVER-CB	Backpack Covers - Coyote Brown
GR-COVER-MC	Backpack Covers - Multicam
GR-FRAME-CB-L	Harness Frame - Coyote Brown - Size Large
GR-FRAME-CB-XL	Harness Frame - Coyote Brown - Size Extra Large
GR-FRAME-MC-L	Harness Frame - Multicam - Size Large
GR-FRAME-MC-XL	Harness Frame - Multicam - Size Extra Large
GR-BATTERY	Backpack Battery - Spare
GR-CHARGER	Backpack Battery Charger - Spare
GR-PWR-PT-CBL	Cable for System Operation via AC or DC Mains Power (one included with system)
TRANS-SPEC-X-N	Trans-SPEC-X-N Portable Spectrometer complete with universal mains supply and MAESTRO Pro software.
SIMULANTS-12	Calibration and Training Simulants. Qty 1 EA: CG, HE (Comp. B), HE (HMX), PoP, FS, GB, HC, HD, WP, L, VX, and Sand. Includes HazCom labels and 3 shipping drums.

**M-1 In Situ Soil Counting Systems**

Model	Description
M1-xxx-DDD	Includes GEM P-type coaxial detector with SMART-1 technology in PopTop capsule with warranted efficiency $\geq$ xxx%, L:D ratio in the range 0.5–1.3 (see page 10 for further detector details), and single 10-ft DigiDART-to-detector connection cable. MG Gamma Gage cryostat and dewar (capacity "DDD" = 1.2, 3.0, or 5.0 liter), M-1-T1 tripod, DigiDART, DigiDART-OPT3, ISOPLUS software, Laptop computer and System User's Manual Set.
M1-30-DDD	M-1 In Situ Soil Counting System incorporating GEM30 detector
M1-40-DDD	M-1 In Situ Soil Counting System incorporating GEM40 detector
M1-50-DDD	M-1 In Situ Soil Counting System incorporating GEM50 detector
M1-70-DDD	M-1 In Situ Soil Counting System incorporating GEM70 detector
M1-90-DDD	M-1 In Situ Soil Counting System incorporating GEM90 detector
M1-100-DDD	M-1 In Situ Soil Counting System incorporating GEM100 detector
M1-120-DDD	M-1 In Situ Soil Counting System incorporating GEM120 detector
DWR-S/F	Storage Fill Dewar
M-1-T1	Variable-length Tripod



**ISO-CART Mobile Assay System**

Model	Description
ISO-CART-85-PC	Complete ISO-CART-85 System, factory calibrated. Includes ISO-CART-II, IDM-200-V-ISO-2-DCC, ISO-2-IDM-SHD, IDM-200-V, ISOTOPIIC software, ISO-CAL, and laptop computer.
ISO-CART-85-NOPC	Complete ISO-CART-85 System. Includes ISO-CART-II, IDM-200-V-ISO-2-DCC, ISO-2-IDM-SHD, IDM-200-V, and ISOTOPIIC software.
ISO-GEMxx-DDD ISO-GMXxx-DDD	Complete system includes: ISO-CART-II, SHD-1, ISO-DCC, HPGe Detector with SMART-1 technology and bayonet pressure fill adaptor, digiDART, ISOTOPIIC software, and Laptop Computer. System is integrated and tested and supplied with factory calibration. See GEM and GMX detector sections for specifications. NOTE: Contact factory for ISO-CART systems based on alternate detector types.  Choice of cryostat and dewar "DDD" as follows: 3.0 = 3.0-liter Gamma Gage dewar; M7L = 7.0-liter MOD dewar.
ISOCART-GEM25-DDD	ISO-CART-II Mobile Assay System incorporating GEM25 detector
ISOCART-GEM40-DDD	ISO-CART-II Mobile Assay System incorporating GEM40 detector
ISOCART-GEM60-DDD	ISO-CART-II Mobile Assay System incorporating GEM60 detector
ISOCART-GEM80-DDD	ISO-CART-II Mobile Assay System incorporating GEM80 detector
ISOCART-GEM100-DDD	ISO-CART-II Mobile Assay System incorporating GEM100 detector
ISOCART-GEM120-DDD	ISO-CART-II Mobile Assay System incorporating GEM120 detector
ISOCART-GMX25-DDD	ISO-CART-II Mobile Assay System incorporating GMX25 detector
ISOCART-GMX40-DDD	ISO-CART-II Mobile Assay System incorporating GMX40 detector
ISOCART-GMX60-DDD	ISO-CART-II Mobile Assay System incorporating GMX60 detector
ISOCART-GMX80-DDD	ISO-CART-II Mobile Assay System incorporating GMX80 detector
<b>Options and Accessories</b>	
ISO-CART-II	ISO-CART-II only (Detector/Collimator Carrier (DCC) not included).
ISO-CAL	Point-source calibration at the factory. (If computer not ordered, files supplied on CD).
ISO-SCALE	Platform scale with indicator floor stand
ISO-TURNTABLE-110	Turntable for drum rotation. Capacity = 445 kg (1000 lb). 110 V, 60 Hz.
ISO-TURNTABLE-240	Turntable for drum rotation. Capacity = 445 kg (1000 lb). 240 V, 50 Hz.
ISO-TURNTABLE-OPT1-2	Increase in turntable RPM from 1 RPM to 2 RPM. Must be ordered with turntable.
ISO-TURNTABLE-OPT1-3	Increase in turntable RPM from 1 RPM to 3 RPM. Must be ordered with turntable.
ISO-TURNTABLE-OPT2	Wireless On/Off via hand-held remote. Must be ordered with turntable.
ISO-TURNTABLE-OPT3	Power Cord Extension from standard 6 ft. to a maximum of 75 ft. Price per foot. Must be ordered with turntable.
ISO-TURNTABLE-OPT4	Hardwired Switch Cable Extension up to 75 ft. Price per foot. Must be ordered with turntable.
ISO-CASE	Transportation case for digiDART, laser range finder, and laptop.
ISO-BOX	Airworthy "roll-in" system transportation box for complete ISO-CART (detector ships in its own crate), includes space for ISO-CASE.
<b>for Detector/Dewar Only</b>	
ISO-DCC	Detector/Collimator Carrier (slide and plate). Compatible with CFG-PG4-3 and CFG-PMOD4-7
SHD-1	5/8-inch Lead Shield/Collimator, copper lined
SHD-2	Tungsten Shield/Collimator
SHD-3	Heavy Duty Lead Shield (1.8" thick) for high backgrounds
ISO-BACKSHIELD	Removable Backshield for PopTop Detector
ISO-LASERMETER	Laser Range Finder
ISO-LSRMTR-ADAPT-1	Lasermeter adapter for SHD-1 shield
ISO-LSRMTR-ADAPT-2	Lasermeter adapter for SHD-2 shield
ISO-LSRMTR-ADAPT-3	Lasermeter adapter for SHD-3 shield
ISO-DEWAR	STD 50L dewar, WD-50 withdrawal device, and TL-6 6-ft. transfer line
<b>for IDM Only. (For use with ISO-CART-II only.)</b>	
IDM-200-V-ISO-2-DCC	Detector/Collimator Carrier for IDM-200-V. For use with ISO-CART-II only.
ISO-2-IDM-FOV-2	2" Steel Field of View Collimator for use with IDM-200-V, Sn/Cu lined. For use with ISO-CART-II only.
ISO-2-IDM-FOV-4	4" Steel Field of View Collimator for use with IDM-200-V, Sn/Cu lined. For use with ISO-CART-II only.
ISO-2-IDM-FOV-6	6" Steel Field of View Collimator for use with IDM-200-V, Sn/Cu lined. For use with ISO-CART-II only.
ISO-2-IDM-SHD	Modular collimator kit for use with IDM-200-V. Includes 1 each ISO-2-IDM-FOV-2, ISO-2-IDM-FOV-4, ISO-2-IDM-FOV-6 and 3 each ISO-2-IDM-SHD-2. For use with ISO-CART-II only.
ISO-2-IDM-SHD-EXT	Bottle counting shield extension for ISO-2-IDM-SHD. Includes 6 each 1-L bottles. For use with ISO-CART-II only.
ISO-2-IDM-SHD-2	2" deep lead sectional shield for FOV collimator. 1" wall thickness. For use with ISO-CART-II only.
<b>for Detective/Trans-SPEC only</b>	
TSP-ISO-DCC	Carrier slide and plate for Detective or trans-SPEC models. Requires ISO-ADAPT, ISO-ADAPT-100, or ISO-ADAPT-MICRO.
ISO-ADAPT	Mounting Adapter screws and bar for Detective-EX/DX
ISO-ADAPT-100	Mounting Adapter screws and bar for Detective-EX/DX-100T or trans-SPEC-DX-100T
ISO-ADAPT-MICRO	Mounting Adapter for Micro-Detective or Micro-trans-SPEC
TSP-ISO-SHLD-3	Lead Shield, 3" L x 2" D. Provides 0.5" collimation. Use with Detective or trans-SPEC models.
TSP-ISO-SHLD-2	Lead Shield, 2" L x 2" D. For additional collimation with TSP-ISO-SHLD-3.

**Software**

Model	Description
A11-BW	CONNECTIONS Programmer's Toolkit
A11-GW	Documentation for A11-BW
A11-UW	Update from A11-B32 or A11-BW to latest version A11-BW
A36-BW	AlphaVision Alpha Analysis Software
A36-BVW	AlphaVision Alpha Analysis Software with A36-VW V&V Test Results and Certificate of Validation
A36-GW	Documentation for AlphaVision
A36-NW	AlphaVision additional network copy
A36-UW	Update for AlphaVision
A36-UVW	Update for AlphaVision with A36-VW V&V Test Results and Certificate of Validation
A36-VW	AlphaVision V&V Test Results and Certificate of Validation
A44-BW	GammaVision Report Writer
A44-GW	Documentation for GammaVision Report Writer
A44-UW	Update for GammaVision Report Writer
A49-B32	DataMaster Spectrum File Conversion Software
A65-BW	MAESTRO Multichannel Analyzer (MCA) Application Software. Includes standalone or first network copy binary use license.
A65-GW	Hard Copy Documentation for MAESTRO. Note: A PDF version of the MAESTRO manual is installed with the application. Hard copy documentation must be ordered separately if desired.
A65-NW	Single Use Network Copy. Requires current version of A65-BW
A65-UW	MAESTRO update from A65-BW or A65-B32 models.
A65-VW	MAESTRO V&V Test Results and Certificate of Validation.
A65-2YW	2 Year Software Subscription for MAESTRO
A65-3YW	3 Year Software Subscription for MAESTRO
A65-4YW	4 Year Software Subscription for MAESTRO
A65-5YW	5 Year Software Subscription for MAESTRO
A66-BW	GammaVision Gamma-Ray HPGe Spectral Analysis
A66-BVW	GammaVision Gamma-Ray HPGe Spectral Analysis Software. Includes A66-VW V&V Test Results and Certificate of Validation
A66-GW	Documentation for GammaVision
A66-NW	GammaVision additional network copies
A66-UW	Update for GammaVision
A66-UVW	Update for GammaVision. Includes A66-VW V&V Test Results and Certificate of Validation
A66-VW	Verification and Validation Documentation for GammaVision
A66-2YW	2 year update subscription for GammaVision
A66-3YW	3 year update subscription for GammaVision
A66-4YW	4 year update subscription for GammaVision
A66-5YW	5 year update subscription for GammaVision
A66MP-BW	MAESTRO-Pro Spectroscopy Software for Windows. Single PC License
A66MP-NW	MAESTRO-Pro Single PC Network license. Requires current version of A66MP-BW on the same network
A66MP-UW	MAESTRO-Pro Single PC update license from A66MP-BW or A65-BW
A66SV-BW	GammaVision Gamma Spectroscopy Software for Windows (Scintillator Only Option)
A66SV-NW	GammaVision Single Use Network Copy (Scintillator Only Option). Requires current version of A66SV-BW.
A66SV-UW	GammaVision Update from A35-B32 (ScintiVision) or A66SV-BW (GammaVision Scintillator Only Option)
A73-B32	Operating Software for EASY-MCS
A73-G32	Documentation for EASY-MCS Hardware and Software
A73-U32	Upgrade to the latest version of EASY-MCS software
ANGLE-BW	Advanced Gamma Spectroscopy Efficiency Calibration Software. Single PC License.
ANGLE-GW	Documentation for ANGLE
ANGLE-UW	Update from ANGLE V4 to V5. (Update from V3 or earlier requires purchase of ANGLE-BW)
C53-BW	Nuclide Navigator Pro Single Computer License
C53-CDW	Nuclide Navigator Pro 5-User License. Requires purchase of C53-BW.
C53-UW	Nuclide Navigator Pro Update from C53-B32 or C53-BW
FG-1-BW	FoodGuard-1 Software
FRAM-BW	FRAM Gamma-Ray Isotopic Analysis Software
FRAM-GW	Documentation for FRAM
FRAM-UW	Update for FRAM

**Software**

Model	Description
GlobalValue-BWS	Global Value Productivity Suite for GammaVision – Site License. For use with Networked Database Connections. Includes 2-days on-site installation and training (Travel to site is not included.)
GlobalValue-UWS	Global Value Productivity Suite for GammaVision – Site License Upgrade. For use with Networked Database Connections. Includes 2-days on-site installation and training. (Travel to site is not included.) Requires previous Site License model (Global Value, Global Value-BWS or GlobalValue-UWLS)
GlobalValue-BWL	Global Value Productivity Suite for GammaVision – Single Computer License. For use on a single computer with databases stored on the same computer. No on-site time included.
GlobalValue-UWL	Global Value Productivity Suite for GammaVision – Single Computer License Upgrade. For use on a single computer with databases stored on the same computer. Requires previous version of Global Value-BWL. No on-site time included.
GlobalValue-UWLS	Global Value Productivity Suite for GammaVision – Single Computer to Site License Upgrade. For use with Networked Database Connections. Requires previous version of Global Value-BWL. No on-site time included.
GlobalValue-ADD	Additional day of installation, customization, or training. (Excludes associated expenses.)
ISOPLUS-BW	ISOTOPIC Software for the analysis of containers, objects and soils.
ISOPLUS-GW	Documentation for ISOTOPIC
ISOPLUS-NW	ISOTOPIC Network Copy
ISOPLUS-UW	Update for ISOTOPIC
ISOPLUS-VW	Verification and Validation Documentation for ISOTOPIC
ISOPLUS-2YW	2 year update subscription for ISOTOPIC
ISOPLUS-3YW	3 year update subscription for ISOTOPIC
ISOPLUS-4YW	4 year update subscription for ISOTOPIC
ISOPLUS-5YW	5 year update subscription for ISOTOPIC
LVIS-B32	LVIS Counting Laboratory Application Manager Software
LVIS-N32	LVIS-B32 additional network copy. Requires previous purchase of LVIS-B32.
LVIS-U32	Update for LVIS-B32. Requires BUL from previous version of LVIS-B32.
LVIS-A66-BW	LVIS-B32 and GammaVision Software
LVIS-A66-UW	LVIS-B32 and update for GammaVision Software
MGA-B32	MGA++ Isotopic Ratio Software: MGA and U235 32-bit Versions
MGA-G32	Documentation for MGA-B32
MGA-N32	MGA++ additional network copy
MGA-U32	Update for MGA-B32
MGA-B32-R	MGA++ Isotopic Ratio Software in Russian
MGA-G32-R	Documentation for MGA-B32-R
RENP-BW	Renaissance Whole Body Counter Software
RENP-GW	Additional Hard Copy Documentation for Renaissance
RENP-NW	Renaissance Single Use Network Copy
RENP-UW	Update from RENP-B32, RENP-BW, or RENP-NW to latest version of Renaissance

## Experiment Products

- Due to the complexity of in country regulations regarding the importation of radioactive sources we are recommending that customers order directly from the source suppliers. They can be found on the ORTEC website here <http://www.ortec-online.com/service-and-support/library/educational-experiments>

Model	Description
01865-AB	2.5 $\mu$ Mylar 3" x 300'
01866-AB	3.6 $\mu$ Mylar 3" x 300'
01867-AB	6.0 $\mu$ Mylar 3" x 300'
305-AX	Thin Window Vacuum Chamber with Source Holder
4542PC	Proportional Counter, Xenon, 10 mil Be
5T1200B2/2	1.2" x 0.2" NaI Detector with PMT and Be window
AL-ROD-AX	0.5" x 4" Al rod
ALRD-AX	Aluminum Absorber Rod 6-cm dia x 7-cm long
CURD-AX	Copper Absorber Rod 6-cm dia x 7-cm long
DETECTOR-STAND-AX	NaI Detector Downlooking Stand with source and foil holder
FERD-AX	Iron Absorber Rod 6-cm dia x 7-cm long
FOIL-AL-30	Box of ten 1/2" diameter Al foils, 0.030" thick
FOIL-AL-5	Box of ten 1/2" diameter Al foils, 0.005" thick
FOIL-CD-40	Box of ten Cd covers, 0.040" thick
FOIL-CU-10	Box of ten 1/2" diameter Cu foils, 0.010" thick
FOIL-FE-5	Box of ten 1/2" diameter Fe foils, 0.005" thick
FOIL-MO-3	Box of ten 1/2" diameter Mo foils, 0.003" thick
FOIL-NI-10	Box of ten 1/2" diameter Ni foils, 0.010" thick
FOIL-NI-3	Box of ten 1/2" diameter Ni foils, 0.003" thick
FOIL-SN-4	Box of ten 1/2" diameter Sn foils, 0.004" thick
FOIL-TA-5	Box of ten 1/2" diameter Ta foils, 0.005" thick
GP35	GM Probe with Stand and Cables
GPI	GM Pulse Inverter
P2116/2(329)	1/2" x 4" Fast Plastic Detector with PMT
PC-1	Small Business Computer
PC-2	Medium Business Computer
PC-STAND-AX	Proportional Counter stand with source holder
PBRD-AX	Lead Absorber Rod 6-cm dia x 7-cm long (clad in 0.062" thick copper)
PERD-AX	Polyethylene Absorber Rod 6-cm dia x 7-cm long (shadow bar)
POLYCARB-SHEET	12"x12"x0.060" Polycarb Sheet
PTFE-SHEET	12"x12"x0.093" PTFE Sheet
RAS20	Set of 20 Absorbers (Pb, Al, Poly, Plastic)
SA04544M	Ring Stand with Triangular Support (Retort Stand)
SB10760M	Right-Angle Clamp Holder (Retort Stand)
SB28602M	3-Fingered Extension Clamp (Retort Stand)
SPA38	1.5 x 1.5" NaI Detector with PMT Stand and Cables
TDS3032C	300-MHz, 2-channel, Oscilloscope

# ***ORTEC***

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