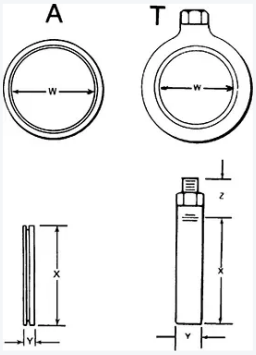
ORTEC

ORTEC B Series

Totally depleted silicon surface-barrier detectors

ORTEC B Series comprises 74 models (totally depleted silicon s urface-barrier detectors). The models differ in active area, d epletion depth and warranted resolution, among other things – c ompare them in the model table.



Detector type

Totally depleted silicon surface barrier [1]

Specifications

Detector type	Totally depleted silicon surface barrier	[1]
Resolution measurement conditions	^{241}Am, 5.486 MeV alphas; standard ORTEC electronics; 0.5 µs shaping time c onstants	[1]
Measurement and warranty temperature	21 ±1 °C	[2]
Resolution reference geometry	Thin-window point source; distance at least 2 times the detector diameter	[2]
Mount options per product guide	A/T (open back)	[3]
Alpha Suite compatibility	Not guaranteed compatible; requires an approved special for compatibility and warranted specifications	[3]
Contact used for resolution test	≤500 µm thickness: measured through the exit (low-field-strength) contact; >500 µm: through the front contact	[2]

Models

Model	Minimum active area	Guaranteed maximum alpha resolution	Nominal depletion depth	Depletion depth range
B-015-050-150	≥50 mm² [3]	≤15 keV FWHM [4]	150 µm [4]	125–175 µm [4]
B-015-050-200	≥50 mm² [3]	≤15 keV FWHM [4]	200 µm [4]	176–225 µm [4]
B-015-050-250	≥50 mm² [3]	≤15 keV FWHM [4]	250 µm [4]	226–275 µm [4]
B-015-050-300	≥50 mm² [3]	≤15 keV FWHM [4]	300 µm [4]	276–350 µm [4]
B-015-050-400	≥50 mm² [3]	≤15 keV FWHM [4]	400 µm [4]	351–450 µm [4]
B-015-050-500	≥50 mm² [3]	≤15 keV FWHM [4]	500 µm [4]	451–550 µm [4]
B-015-050-700	≥50 mm² [3]	≤15 keV FWHM [4]	700 µm [4]	650–750 µm [4]
B-015-050-1000	≥50 mm² [3]	≤15 keV FWHM [4]	1000 µm [4]	950–1050 µm [4]
B-016-050-150	≥50 mm² [3]	≤16 keV FWHM [4]	150 µm [4]	125–175 µm [4]
B-016-050-200	≥50 mm² [3]	≤16 keV FWHM [4]	200 µm [4]	176–225 µm [4]
B-016-050-250	≥50 mm² [3]	≤16 keV FWHM [4]	250 µm [4]	226–275 µm [4]

B-016-050-300	≥50 mm² [3]	≤16 keV FWHM [4]	300 µm [4]	276–350 µm [4]
B-016-050-400	≥50 mm² [3]	≤16 keV FWHM [4]	400 µm [4]	351–450 µm [4]
B-016-050-500	≥50 mm² [3]	≤16 keV FWHM [4]	500 µm [4]	451–550 µm [4]
B-016-050-700	≥50 mm² [3]	≤16 keV FWHM [4]	700 µm [4]	650–750 µm [4]
B-016-050-1000	≥50 mm² [3]	≤16 keV FWHM [4]	1000 µm [4]	950–1050 µm [4]
B-017-050-1500	≥50 mm² [3]	≤17 keV FWHM [4]	1500 µm [4]	1450–1550 µm [4]
B-017-150-150	≥150 mm² [3]	≤17 keV FWHM [4]	150 µm [4]	125–175 µm [4]
B-017-150-200	≥150 mm² [3]	≤17 keV FWHM [4]	200 µm [4]	176–225 µm [4]
B-017-150-250	≥150 mm² [3]	≤17 keV FWHM [4]	250 µm [4]	226–275 µm [4]
B-017-150-300	≥150 mm² [3]	≤17 keV FWHM [4]	300 µm [4]	276–350 µm [4]
B-017-150-400	≥150 mm² [3]	≤17 keV FWHM [4]	400 µm [4]	351–450 µm [4]
B-017-150-500	≥150 mm² [3]	≤17 keV FWHM [4]	500 µm [4]	451–550 µm [4]
B-017-150-700	≥150 mm² [3]	≤17 keV FWHM [4]	700 µm [4]	650–750 µm [4]
B-017-150-1000	≥150 mm² [3]	≤17 keV FWHM [4]	1000 µm [4]	950–1050 µm [4]
B-018-050-2000	≥50 mm² [3]	≤18 keV FWHM [4]	2000 µm [4]	1950–2050 µm [4]
B-018-150-150	≥150 mm² [3]	≤18 keV FWHM [4]	150 µm [4]	125–175 µm [4]
B-018-150-200	≥150 mm² [3]	≤18 keV FWHM [4]	200 µm [4]	176–225 µm [4]
B-018-150-250	≥150 mm² [3]	≤18 keV FWHM [4]	250 µm [4]	226–275 µm [4]
B-018-150-300	≥150 mm² [3]	≤18 keV FWHM [4]	300 µm [4]	276–350 µm [4]
B-018-150-400	≥150 mm² [3]	≤18 keV FWHM [4]	400 µm [4]	351–450 µm [4]
B-018-150-500	≥150 mm² [3]	≤18 keV FWHM [4]	500 µm [4]	451–550 µm [4]
B-018-150-700	≥150 mm² [3]	≤18 keV FWHM [4]	700 µm [4]	650–750 µm [4]
B-018-150-1000	≥150 mm² [3]	≤18 keV FWHM [4]	1000 µm [4]	950–1050 µm [4]
B-019-050-1500	≥50 mm² [3]	≤19 keV FWHM [4]	1500 µm [4]	1450–1550 µm [4]
B-019-150-1500	≥150 mm² [3]	≤19 keV FWHM [4]	1500 µm [4]	1450–1550 µm [4]
B-019-300-150	≥300 mm² [3]	≤19 keV FWHM [4]	150 µm [4]	125–175 µm [4]
B-019-300-200	≥300 mm² [3]	≤19 keV FWHM [4]	200 µm [4]	176–225 µm [4]
B-019-300-250	≥300 mm² [3]	≤19 keV FWHM [4]	250 µm [4]	226–275 µm [4]
B-019-300-300	≥300 mm² [3]	≤19 keV FWHM [4]	300 µm [4]	276–350 µm [4]
B-019-300-400	≥300 mm² [3]	≤19 keV FWHM [4]	400 µm [4]	351–450 µm [4]
B-019-300-500	≥300 mm² [3]	≤19 keV FWHM [4]	500 µm [4]	451–550 µm [4]
B-019-300-700	≥300 mm² [3]	≤19 keV FWHM [4]	700 µm [4]	650–750 µm [4]
B-019-300-1000	≥300 mm² [3]	≤19 keV FWHM [4]	1000 µm [4]	950–1050 µm [4]
B-020-150-2000	≥150 mm² [3]	≤20 keV FWHM [4]	2000 µm [4]	1950–2050 µm [4]
B-020-300-150	≥300 mm² [3]	≤20 keV FWHM [4]	150 µm [4]	125–175 µm [4]
B-020-300-200	≥300 mm² [3]	≤20 keV FWHM [4]	200 µm [4]	176–225 µm [4]
B-020-300-250	≥300 mm² [3]	≤20 keV FWHM [4]	250 µm [4]	226–275 µm [4]
B-020-300-300	≥300 mm² [3]	≤20 keV FWHM [4]	300 µm [4]	276–350 µm [4]

B-020-300-400	≥300 mm² [3]	≤20 keV FWHM [4]	400 µm [4]	351–450 µm [4]
B-020-300-500	≥300 mm² [3]	≤20 keV FWHM [4]	500 µm [4]	451–550 µm [4]
B-020-300-700	≥300 mm² [3]	≤20 keV FWHM [4]	700 µm [4]	650–750 µm [4]
B-020-300-1000	≥300 mm² [3]	≤20 keV FWHM [4]	1000 µm [4]	950–1050 µm [4]
B-021-150-1500	≥150 mm² [3]	≤21 keV FWHM [4]	1500 µm [4]	1450–1550 µm [4]
B-021-300-1500	≥300 mm² [3]	≤21 keV FWHM [4]	1500 µm [4]	1450–1550 µm [4]
B-021-450-500	≥450 mm² [3]	≤21 keV FWHM [4]	500 µm [4]	451–550 µm [4]
B-021-450-700	≥450 mm² [3]	≤21 keV FWHM [4]	700 µm [4]	650–750 µm [4]
B-021-450-1000	≥450 mm² [3]	≤21 keV FWHM [4]	1000 µm [4]	950–1050 µm [4]
B-023-300-2000	≥300 mm² [3]	≤23 keV FWHM [4]	2000 µm [4]	1950–2050 µm [4]
B-023-450-150	≥450 mm² [3]	≤23 keV FWHM [4]	150 µm [4]	125–175 µm [4]
B-023-450-200	≥450 mm² [3]	≤23 keV FWHM [4]	200 µm [4]	176–225 µm [4]
B-023-450-250	≥450 mm² [3]	≤23 keV FWHM [4]	250 µm [4]	226–275 µm [4]
B-023-450-300	≥450 mm² [3]	≤23 keV FWHM [4]	300 µm [4]	276–350 µm [4]
B-023-450-400	≥450 mm² [3]	≤23 keV FWHM [4]	400 µm [4]	351–450 µm [4]
B-023-450-500	≥450 mm² [3]	≤23 keV FWHM [4]	500 µm [4]	451–550 µm [4]
B-023-450-700	≥450 mm² [3]	≤23 keV FWHM [4]	700 µm [4]	650–750 µm [4]
B-023-450-1000	≥450 mm² [3]	≤23 keV FWHM [4]	1000 µm [4]	950–1050 µm [4]
B-024-450-150	≥450 mm² [3]	≤24 keV FWHM [4]	150 µm [4]	125–175 µm [4]
B-024-450-200	≥450 mm² [3]	≤24 keV FWHM [4]	200 µm [4]	176–225 µm [4]
B-024-450-250	≥450 mm² [3]	≤24 keV FWHM [4]	250 µm [4]	226–275 µm [4]
B-024-450-300	≥450 mm² [3]	≤24 keV FWHM [4]	300 µm [4]	276–350 µm [4]
B-024-450-400	≥450 mm² [3]	≤24 keV FWHM [4]	400 µm [4]	351–450 µm [4]
B-024-450-1500	≥450 mm² [3]	≤24 keV FWHM [4]	1500 µm [4]	1450–1550 µm [4]
B-026-450-2000	≥450 mm² [3]	≤26 keV FWHM [4]	2000 µm [4]	1950–2050 µm [4]

Model	Ordering condition
B-015-050-150	–
B-015-050-200	–
B-015-050-250	–
B-015-050-300	–
B-015-050-400	–
B-015-050-500	–
B-015-050-700	–
B-015-050-1000	–
B-016-050-150	–
B-016-050-200	–
B-016-050-250	–
B-016-050-300	–

B-016-050-400	–
B-016-050-500	–
B-016-050-700	–
B-016-050-1000	–
B-017-050-1500	This depth requires special order according to manufacturer [1]
B-017-150-150	–
B-017-150-200	–
B-017-150-250	–
B-017-150-300	–
B-017-150-400	–
B-017-150-500	–
B-017-150-700	–
B-017-150-1000	–
B-018-050-2000	This depth requires special order according to manufacturer [1]
B-018-150-150	–
B-018-150-200	–
B-018-150-250	–
B-018-150-300	–
B-018-150-400	–
B-018-150-500	–
B-018-150-700	–
B-018-150-1000	–
B-019-050-1500	This depth requires special order according to manufacturer [1]
B-019-150-1500	This depth requires special order according to manufacturer [1]
B-019-300-150	–
B-019-300-200	–
B-019-300-250	–
B-019-300-300	–
B-019-300-400	–
B-019-300-500	–
B-019-300-700	–
B-019-300-1000	–
B-020-150-2000	This depth requires special order according to manufacturer [1]
B-020-300-150	–
B-020-300-200	–
B-020-300-250	–
B-020-300-300	–
B-020-300-400	–

B-020-300-500	–
B-020-300-700	–
B-020-300-1000	–
B-021-150-1500	This depth requires special order according to manufacturer [1]
B-021-300-1500	This depth requires special order according to manufacturer [1]
B-021-450-500	–
B-021-450-700	–
B-021-450-1000	–
B-023-300-2000	This depth requires special order according to manufacturer [1]
B-023-450-150	–
B-023-450-200	–
B-023-450-250	–
B-023-450-300	–
B-023-450-400	–
B-023-450-500	–
B-023-450-700	–
B-023-450-1000	–
B-024-450-150	–
B-024-450-200	–
B-024-450-250	–
B-024-450-300	–
B-024-450-400	–
B-024-450-1500	This depth requires special order according to manufacturer [1]
B-026-450-2000	This depth requires special order according to manufacturer [1]

Sources

[1] B Series Totally Depleted Silicon Surface Barrier Radiation Detector
RTEC (AMETEK) · product-page · Page heading; Ordering Information, footnote **; Ordering Information, column header "Depletion Depth 150 0 µm§" and footnote § · checked 2026-10-16
https://web.archive.org/web/20261016000000/https://www.ortec-online.com/products/radiation-detectors/silicon...

[2] Introduction to Charged-Particle Detectors
RTEC (AMETEK) · application-note · p. 8, "Test Data and General Information – Alpha Resolution"; p. 3, "Energy Resolution and Noise" · checked 2026-10-16
https://web.archive.org/web/20220928135003/https://www.ortec-online.com/-/media/ametekortec/other/introducti...

[3] ORTEC Product Guide
RTEC (AMETEK) · catalog · PDF p. 11 (printed p. 8), table "Standard Mounting Information"; PDF p. 11 (printed p. 8) "Ordering Information"; same note on the series table page; PDF p. 6 (printed p. 3), table "B Series Totally Depleted Silicon Surface Barrier Detectors"; PDF p. 11 (printed p. 8) " · checked 2026-10-16
https://web.archive.org/web/20230405035438/https://www.ortec-online.com/-/media/ametekortec/product-guide/pr...

[4] B Series – Totally Depleted Silicon Surface Barrier Detectors (brochure 020821)
ORTEC (AMETEK) · brochure · p. 1, Ordering Information table, "Guaranteed Maximum Resolution (keV)**", α column; footnote **; p. 1, Ordering Information table, column "Depletion Depth 150 µm Range: 125–175 µm"; p. 1, Ordering Information table, column "Depletion Depth 200 µm Range: 176–225 µm" · checked 2026-10-16
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Every value is taken from the manufacturer’s own document; the number after the value refers to the source list. Always check against the latest datasheet before ordering.

The data comes from the manufacturer’s published documents. Manufacturers may change specifications; the current configuration and performance are confirmed in the quotation.