

BORON CARBIDE WINDOWS

AMPTEK BORON CARBIDE (B₄C) WINDOWS

The Safer, Smarter Alternative to Beryllium, With No Compromise on Performance

Amptek's Boron Carbide (B₄C) Windows are transforming how OEMs and end-users approach X-ray detection. Purpose-built for our Si-PIN detectors, these advanced windows offer a non-toxic, high-performance solution to traditional beryllium foils, without sacrificing efficiency or data quality.

If you're looking for cutting-edge performance that's safer, more consistent, and easier to integrate, B₄C is your solution.

Key Benefits

- **Non-toxic and worry-free:** Safe for handling, installation, and operation, unlike hazardous beryllium.
- **High transmission performance:** Comparable to 1/3 mil and 1/2 mil Be windows across key energy ranges used in handheld and benchtop XRF applications.
- **Unmatched Uniformity:** Advanced semiconductor manufacturing ensures consistent thickness, for consistent energy transmission.
- **No support grid needed:** Self-supported 3.5 μm B₄C layer with outer aluminum coating for effective EMI shielding and light tightness.
- **Perfect Fit for Si-PIN detectors:** Optimized for Amptek's 25mm² and 6 mm² active area models.

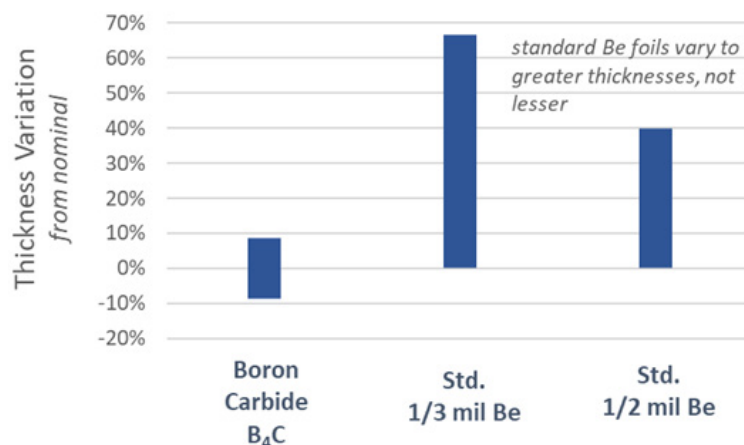
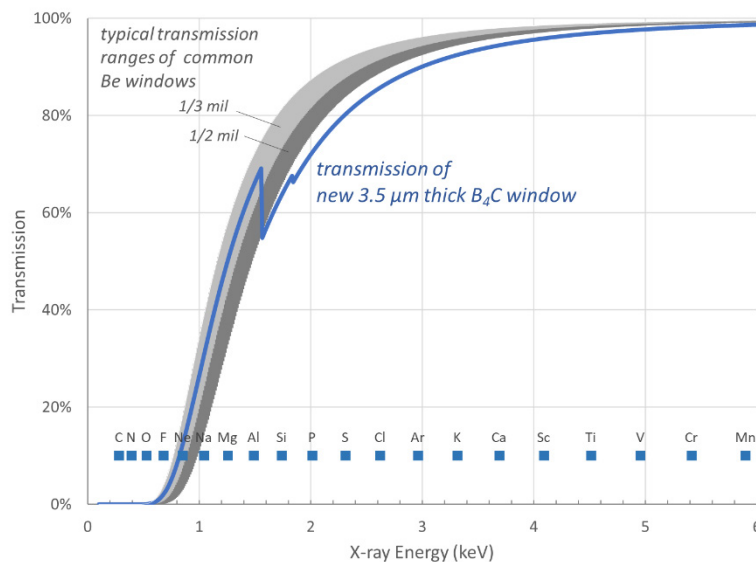
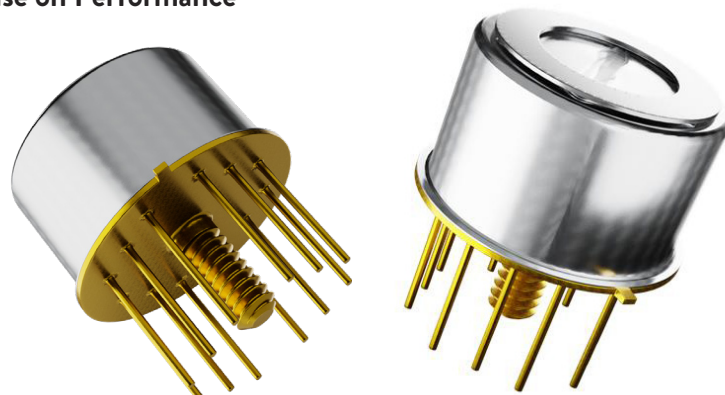
Why Boron Carbide?

Better thickness control: B₄C's ± 8% uniformity outperforms Be's variable ±50% thickness deviations.

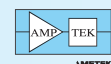
Improved predictability: With tighter control over thickness and uniform low-energy transmission, your data is more accurate, and your results, more reliable.

Applications

- Handheld XRF analysers
- Benchtop elemental analysis systems
- OEM integrations that demand both safety and precision



High Performance, Zero Compromise on Safety.

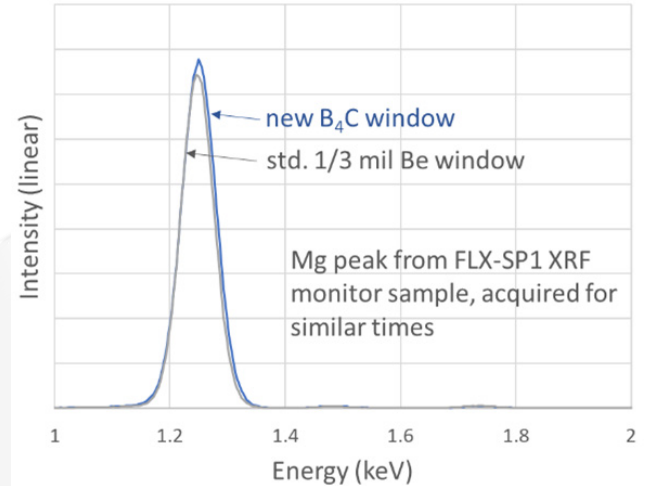
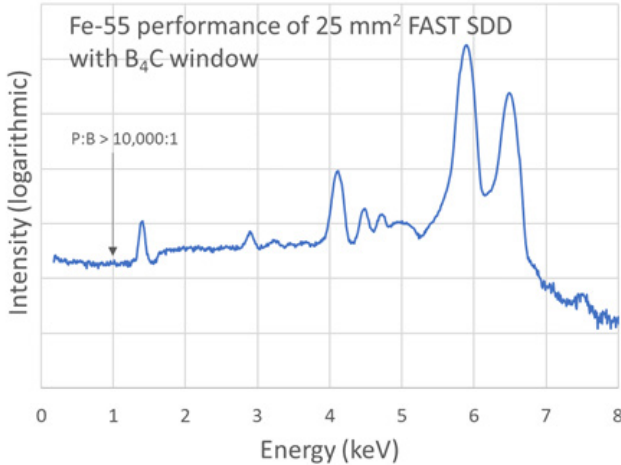


AMETEK

GENERAL SPECIFICATIONS

	New Boron Carbide B₄C	Compared to standard Be windows	
		1/3 mil Be	½ mil Be
Thickness	3.5 µm	7.6 µm .0003"	12.7 µm .0005"
Tolerance	(-.3/+3 µm)	(-.0 µm/+5.1 µm) (-.0000"/+.0002")	(-.0 µm/+5.1 µm) (-.0000"/+.0002")
Diameter	7 mm	7 mm	
Grounded?	Yes (Al coated)		
Additional coatings	Yes (Aluminum)	Yes (Parylene)	
Operating Temperature	-35 °C to +80° C	-35 °C to +80° C	
Ruggedness	80% survival from 4ft. drop test		

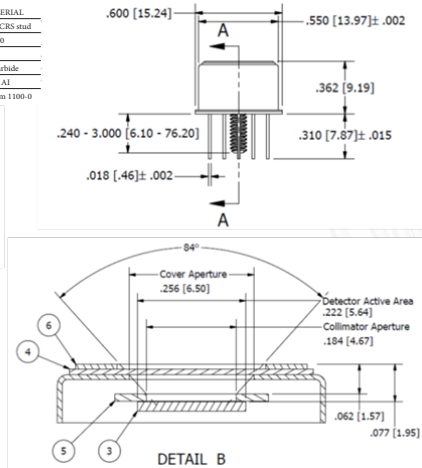
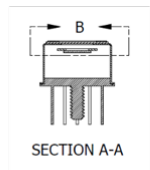
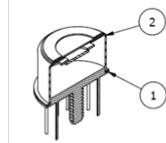
EXAMPLE PERFORMANCE



MECHANICALS

B₄C windows are currently available and sized to match Amptek's 25 mm² FAST SDD[®] (illustrated) and 25 mm² Si-PIN detectors.

ITEM	DESCRIPTION	MATERIAL
1	Base, TO-8	Kovar w/CRS stud
2	Cover	Nickel 200
3	Detector Active Area, 24mm ² x .5mm	SDD
4	Window, B ₄ C 0.3mm x 12.7mm	Boron Carbide
5	Collimator	W, Ti, Cr, Al
6	Washer, Al, External, TO-8	Aluminum 1100-0



Ready to Upgrade?

Boron Carbide Windows are now available and sized for Amptek's 6 mm² Si-PIN detectors. Improve safety and performance, without compromise.

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