

123 eV
at Mn $K\alpha$
100,000 cps

XFlash® 5010 - The ultimate resolution SD Detector

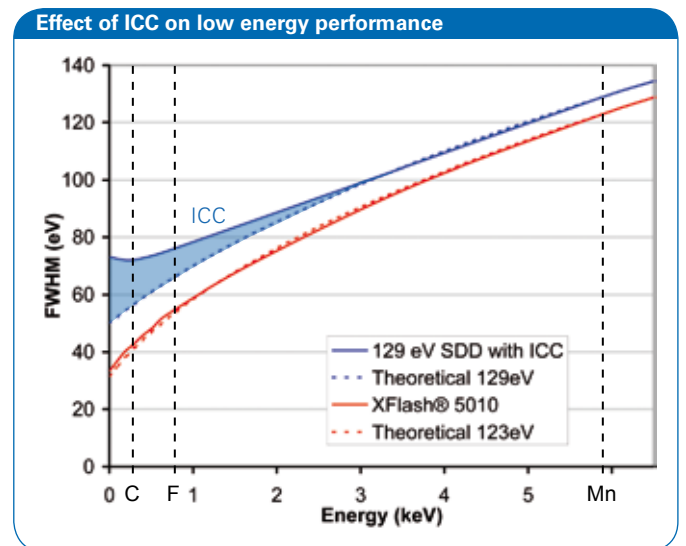
Bruker AXS Microanalysis proudly presents the XFlash® 5010, the LN₂-free silicon drift detector (SDD) for high resolution X-ray spectroscopy and microanalysis. The XFlash® 5010's performance and reliability is clearly superior to any other semiconductor X-ray detector available today.

Like all members of the XFlash® family the XFlash® 5010 is designed to cause no influence on the SEM, even at low acceleration voltages. This is attained through lightweight construction, liquid nitrogen-free Peltier cooling, choice of materials and a new patented electron trap.

The new XFlash® 5010 provides an even better energy resolution than its predecessors. It displays 123 eV (Mn $K\alpha$) at count rates up to 100,000 cps and beyond. This excellent energy resolution at manganese also warrants outstanding light element / low energy performance. As the detector is free of resolution-degrading effects, like incomplete charge collection (ICC), it almost reaches the theoretical limits for Si-based semiconductor X-ray detectors with 123 eV. This results in 46 eV for the carbon K line and 54 eV for the fluorine K line.



The figure below demonstrates the degrading effect of ICC on the low energy / light element performance of an SD detector. Excellent low energy resolution ensures very good peak separation capabilities in this energy range, an important basis for improved qualitative and quantitative results in nanoanalysis at low energies in the SEM.



Comparison of energy resolution (FWHM) in the low energy range between the XFlash® 5010 and another SDD (with a resolution of 129 eV at Mn $K\alpha$) affected by ICC. Notice the 129 eV detector's deviation from the ideal behavior compared to that of the XFlash®.

Specifications

Energy resolution of 123 eV Mn K α , 46 eV C K α , 54 eV F K α

Also available:

125 eV Mn K α , 48 eV C K α , 58 eV F K α

127 eV Mn K α , 54 eV C K α , 62 eV F K α

129 eV Mn K α , 58 eV C K α , 66 eV F K α

All resolutions stated in compliance with ISO 15632 : 2002 and guaranteed at 100 000 cps

Detection from boron (5) to americium (95), beryllium (4) detection available with 125 and 123 eV versions

Maximum pulse load 750,000 cps

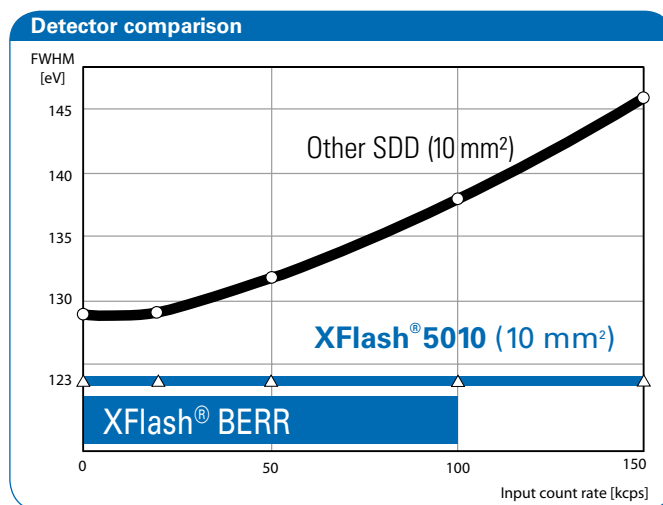
Active area of 10 mm²

Optimized electron trap for interference-free analysis in the low energy range

Peltier cooling (no liquid nitrogen or other cooling agents required)

No image distortion at the SEM due to compact design, low weight and vibration-free cooling method

Compatible with all SEM types



Comparing the energy resolution of the XFlash[®] 5010 with another SDD. The blue bar indicates the input count rate up to which the XFlash[®] 5010's best energy resolution is guaranteed (BERR, best energy resolution range).

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