

New!
60 mm²
127 eV



XFlash® 5060 T - large area SDD for (S)TEM applications

Demanding tasks in X-ray micro- and nanoanalysis on transmission electron microscopes require a detector that delivers optimum results under adverse conditions. Bruker's latest addition to its family of silicon drift detectors (SDD) – the XFlash® 5060 T – is designed for such conditions. Providing 60 mm² active area, it guarantees optimum solid angle for the analysis at low beam currents and of samples with low X-ray yield. The slender detector end cap and microscope -specific collimator design allow shortest detector-sample distances and provide a high take-off angle without requiring sample tilt. The analyst can therefore collect spectra with excellent peak-to-background ratio and without the disadvantage of losing the zone axis.

Compared to Si(Li) detectors, still commonly used for EDS on TEM, the XFlash® 5060 T exhibits superior speed and drastically lower dead times, providing significant advantages in collection efficiency, even in low count rate situations, as the figure overleaf shows.

Additionally, the XFlash® 5060 T can operate with good energy resolution at count rates far beyond what any Si(Li) or even competing SDD can handle on TEM. The detector is fully operational at input count rates of up to 750,000 cps, a big advantage for low-mag high count rate STEM mapping.

Also, there is no danger of “locking up” the spectrometer for minutes when hitting a support grid.

The superb sensitivity of the XFlash® 5060 T allows detection of high energy radiation. In combination with high-end signal processing electronics and sophisticated software, reliable quantitative analysis of element peaks at 40 kV and above is possible.

Bruker's many years of experience in SDD and signal processing electronics design have led to the outstanding energy resolution of the XFlash® 5060 T at only moderate cooling temperatures. A version with 127 eV at Mn K α is available, providing 54 eV carbon K α and 64 eV fluorine K α resolution. This enables reliable and efficient light element analysis of elements down to boron.

The XFlash® 5060 T, including electronics, is designed to cause minimum interference with all compatible transmission electron microscopes, conventional or aberration-corrected. Light-weight and with fanless cooling, this detector causes minimal strain on the column and introduces no vibrations. The low temperature gradient provides stable measurement conditions and the completely non-magnetic detector head minimizes beam shift, when moving the detector in or out during TEM operation.

Technical Specifications

Energy resolution of 133 eV (Mn $K\alpha$) guaranteed at 100,000 cps, 65 eV C $K\alpha$, 73 eV F $K\alpha$
(in compliance with ISO 15632 : 2002)

129 eV and 127 eV also available

Detection from boron (5) to americium (95)

Maximum pulse load 750,000 cps

Active area of 60 mm²

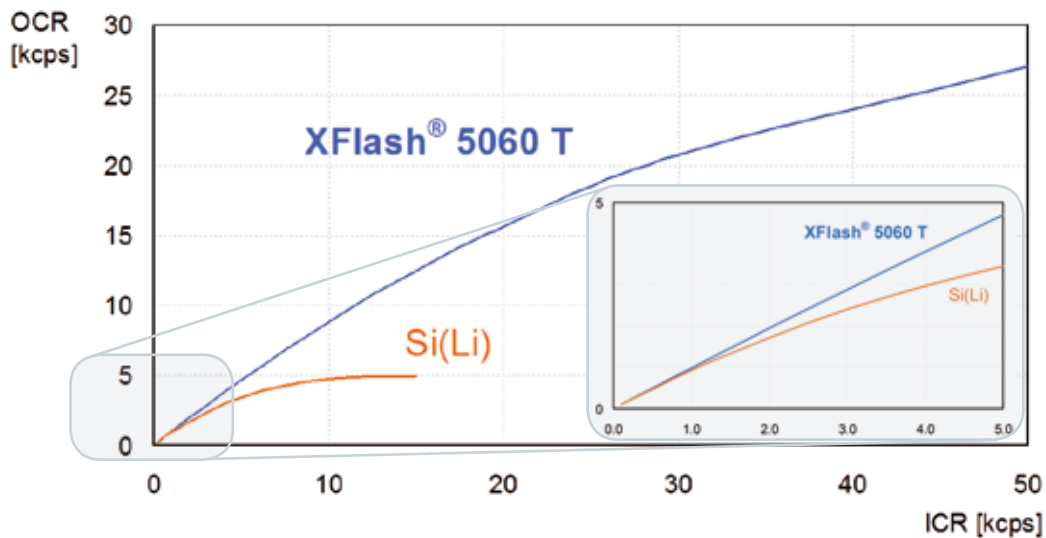
High precision drive with shutter, motorization optional

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

Optimum performance in conventional and Cs-corrected S/TEM

XFlash[®] 5060 T / Si(Li) Detector throughput efficiency comparison

Output Count Rate (OCR) versus Input Count Rate (ICR)



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