



XFlash® QUAD 5040 - The four-channel 40 mm² SDD

Bruker's unique XFlash® QUAD detector is a four-channel 40 mm² silicon drift detector (SDD) with a best guaranteed energy resolution of ≤ 123 eV (Mn K α) at 100,000 cps. Using a passive thermoelectric cooling device, the XFlash® QUAD requires no liquid nitrogen for operation and contains no moving parts. These features make it absolutely free of vibration and result in no distortion of SEM images even at extremely high magnification. Additionally, the detector's optimized electron trap allows interference-free analysis even at low excitation energies.

Four independently operating 10 mm² sensors on a single chip, all equipped with integrated anodes and FETs, form the heart of the XFlash® QUAD Detector. This arrangement provides the high energy resolution of a single 10 mm² sensor at four times the count rate, accepting maximum input count rates in excess of 3,000,000 cps. The XFlash® QUAD is designed to provide large solid angle X-ray detection and a tremendous X-ray signal throughput of 1,100,000 cps using Bruker's hybrid pulse processing unit QUAD SVE, which contains four parallel pulse processors.

The QUAD delivers significantly faster EDS results, making it the ideal choice for high resolution real-time spectrometry, high speed mapping and especially HyperMapping (large area PTS / spectral imaging).

The XFlash® QUAD can be installed on field emission, environmental and variable pressure scanning electron microscopes. In addition, the enormous maximum input count rate of this detector allows its use on microprobes during their normal operation. This makes the simultaneous measurement of any number of elements as well as the analysis of rough samples, particles and tilted specimens possible on microprobes. The QUAD is also suitable for low beam current and low energy applications due to its combination of large solid angle and supreme energy resolution. With its four separate channels, this detector can process the fourfold number of counts before pile-ups visibly occur.

The detector is ready for use as soon as it is switched on and works maintenance-free.

Technical Data

Guaranteed energy resolution of ≤ 123 eV at Mn K α 100,000 cps,

53 eV F K α , 43 eV C K α (in compliance with ISO 15632 : 2002)

Resolutions of ≤ 133 , ≤ 129 , ≤ 127 or ≤ 125 eV at Mn K α 100,000 cps are also available

Detection from beryllium (4) to americium (95)

Allows extremely high count rates (maximum input count rate higher than 3,000,000 cps)

Active area of 40 mm² (4 x 10 mm²)

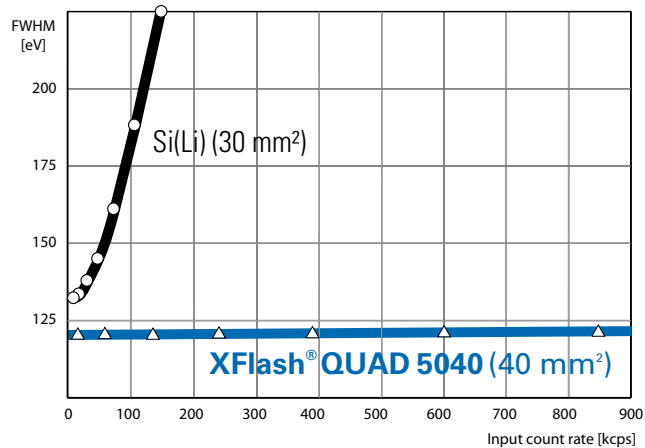
Optimized electron trap for interference-free analysis in the low energy range

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

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

Comparison XFlash® QUAD 5040 / Si(Li) Detector

Typical energy resolution at Mn K α vs. input count rate



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